On the Use of Portable Pyramids for Observing Points of Second- and Third-order Triangulation

S/006/60/000/0[illegible]/024
B007/B123

truck of the type ZIS-5. Angular measurements made from these portable pyramids in 1959 proved to be as exact as observations made from permanent signals. The best observers are mentioned: Comrade V. N. Sudarikov and V. D. Madakalov. The pyramids described here are far more useful than simple signals. This fact is illustrated by a calculation of savings. At the same time the necessary modifications of the construction of these outer pyramids are pointed out, and a few recommendations are given. There are 3 figures and 1 table.

Card 2/2

KHAIMOV, Z.S., assistent

Analysis of triangulation data by methods of mathematical statistics. Izv. vys. ucheb. zav.; geod. i aerof. no.3: 37-52 '63. (MIRA 17:1)

1. Moskovskiy institut inzhenerov geodezii, aerofotos"yemki i kartografii.

KHAIMOV-MAL'KOV, V. YA.

USSR / Mechanical Properties of Crystals and Polycrystalic Compounds. E-9

Abs Jour : Ref Zhur - Fizika, No 4, 1957, No 9409

Author : Aleksandrov, K.S., Khaimov-Mal'kov, V.Ya.
Inst : Institute of Crystallography, Academy of Sciences USSR
Title : Rotation of Plane of Polarization of Elastic Shear Waves

Orig Pub : Kristallografiya, 1956, 1, No 3, 373-374

Abstract : In a crystal specimen of rock salt, approximately 100 mm long, cut in the [110] direction and twisted about this direction by 90°, there was sent a short ultrasonic pulse of shear waves at a frequency of 1.67 Mc. The receiver of a Y-section from the other end of the specimen received the ultrasonic vibrations passing through the crystal, which after amplification were applied to the plates of an oscillograph. It was shown that the twisted crystal of rock salt rotates the plane of oscillations of the particles in the shear wave (plane of polarization) by an angle that equals approxima-

Card : 1/2

USSR / Mechanical Properties of Crystals and Polycrystalic Compounds. E-9

Abs Jour : Ref Zhur - Fizika, No 4, 1957, No 9409

Abstract : tely the angle of twist of the specimen. This phenomenon was observed only for those directions of propagation (twist axis), where there is a difference in the velocities of the two shear waves and where the directions of their displacement are fixed. Similar investigations with rock-salt crystals, beaten out along the cleavages, did not produce the above effect.

Card : 2/2

KHAIMOV-MAL'KOV V.YA.

AKULENOK, Ye.M.; BAGDASAROV, Kh.S.; KHAIMOV-MAL'KOV, V.Ya.

Effect of mechanical stirring and ultrasonic vibrations on the process of adsorption of impurities by monocrystals. Kristallografiia 2 no.1:197-198 '57. (MLRA 10:7)

1. Institut kristallografii Akademii nauk SSSR.
(Crystals--Growth)

Khaimov-Mal'kov, V. Ya.

USSR/Physical Chemistry - Crystals. B-5

Abs Jour : Referat Zhur - Khimiya, No 1, 1958, 272

Author : Kh.S. Bagdasarov, V.Ya. Khaimov-Mal'kov.
Inst : -
Title : Some Experimental Data Concerning Formation Nature of Etching Figures in Ultrasonic Field.

Orig Pub : Kristallografiya, 1957, 2, No 2, 309-310

Abstract : Whiel studying the ca[illegible]f the formation of etching figures on the NaCl cry[illegible]urface during ultrasonic irradiation, the authors [illegible]d a sharp drop of the tensil strength of NaCl crystals in solution (sic!) at an ultrasonic irradiation of the frequency of 22 kilocycles, and the absence of this effect, if the frequency had been 717 kilocycles. Both these phenomena are explained by the formation of microfissures, called cavitation, on the crystal surface, which serve as "germs" of etching figures.

Card 1/1

Inst. Crystallography AS USSR

AUTHOR: Khaimov-Mal'kov, V.Ya. SOV/70-3-4-14/26

TITLE: On the Question of the Growth of Crystals in Porous Media (K voprosu o roste kristallov v poristykh sredakh)

PERIODICAL: Kristallografiya, 1958, Vol 3, Nr 4, pp 488-493 (USSR)

ABSTRACT: The growth of crystals in porous media is of very great practical importance in, for example, the freezing of soil, the formation of gypsum in clay, the setting of cement, etc. The crystallisation pressure for growth from solution is given by:

$$\pi = kT\, v^{-1} \log C/C_0$$

and from a melt by:

$$\pi = dT\, Q/T_0 v ,$$

where Q is the heat of crystallisation, T_0 is the melting point, dT is the super-cooling, C/C_0 is the supersaturation, v is the specific volume. These derive from Thomson's expression. Experiments were carried out in silica gel where the pore size is about

Card1/3

On the Question of the Growth of Crystals in Porous Media

4. 10^{-7} c. Chrome alum crystals were grown in the gel and examination showed that the crystals do not actually penetrate the gel; secondly, that the crystals push the gel away, straining it and sometimes producing cracks and, thirdly, that these cracks indicate the maximum strains to occur at the points of the crystals. Pyramidal forms of the crystals tend to predominate. NaCl crystals growing on the surface of a gel were also examined. They appeared to be columnar with piles of platy crystals growing mushroomwise on their tops. The crystallisation pressure was measured. It is concluded that the growth of crystals in a porous medium is satisfactorily explained by the formulae quoted.

Acknowledgments to Academician A.V. Shubnikov, N.N.Sheftal'

On the Question of the Growth of Crystals in Porous Media

and to A.A. Chernov.
There are 14 figures and 10 references, 8 of which are Soviet and 2 German.

ASSOCIATION: Institut kristallografii AN SSSR
(Institute of Crystallography of the Ac.Sc.USSR)

SUBMITTED: April 25, 1958

Card 3/3

KHAIMOV-MAL'KOV, V.Ya., Cand Phys Math Sci -- (diss) "Study of crystallization pressure. (Pressure of the crystal and the phenomenon of self-purifying)." Mos, 1959, 12 pp (Inst of Crystallography of Acad Sci USSR). 150 copies

(KL 35-59, 112)

38354
S/058/62/000/005/069/119
A061/A101

24.7300

AUTHOR: Khaimov-Mal'kov, V. Ya.

TITLE: A contribution to the thermodynamics of crystallization pressure

PERIODICAL: Referativnyy zhurnal, Fizika, no. 5, 1962, 10, abstract 5E83 (V sb. "Rost kristallov. T. 2", Moscow, AN SSSR, 1959, 5 - 16)

TEXT: Conclusions from and an evaluation of the thermodynamic conditions of phase transition accompanied by the repulsion of foreign particles due to crystallization pressure are presented. A thermodynamic analysis of phase transformation has been made on models to which single-phase pressure has been applied additionally. From the conditions of equilibrium in single-component systems it is concluded that crystallization pressure must rise with the degree of supercooling, practically regardless of the symbol of the repelling crystal face. Under otherwise equal conditions, crystals subjected to elastic stresses display a melting temperature lower than that of unstressed crystals. However, the change of this temperature is independent of the sign of elastic deformation. In dilute solutions, crystallization pressure is independent of the properties of both the sol-

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A061/A101

A contribution to the...

vent and the substance. Crystallization pressure rises with supersaturation. It provides an explanation of the repulsion of foreign particles from the faces of a growing single crystal.

A. Makarevich

[Abstracter's note: Complete translation]

Card 2/2

18.9500 ,

S/058/62/000/009/017/069
A006/A101

AUTHOR: Khaimov-Mal'kov, V. Ya.

TITLE: On the problem of experimentally determining the magnitude of crystallization pressure

PERIODICAL: Referativnyy zhurnal, Fizika, no. 9, 1962, 8, abstract 9E59 (In collection: "Rost kristallov. T. 2", Moscow, AN SSSR, 1959, 17 - 25)

JB

TEXT: The author reproduced experiments to determine crystallization pressure with the aid of various methods, for the purpose of discovering the causes of sharp discrepancies in experimental results obtained previously. The conclusion is drawn that experiments made by the Correns method (C. Correns, W. Steinborn, "Z. Kristallogr.", 1939, v. A101, 117) yield correct results in respect to the order of magnitude. The magnitude of crystallization pressure can not be evaluated from the capture or repulsion of obstacles by growing crystals, since in these phenomena conditions of crystal feed play the decisive part.

[Abstracter's note: Complete translation] Yu. Krishtal

Card 1/1

SOV/70-4-1-20/26

AUTHOR: Khaimov-Mal'kov, V. Ya.

TITLE: On the Question of the Growth of Crystals From Systems Containing Impurities (K voprosu o roste kristallov iz sistem, soderzhashchikh primesi)

PERIODICAL: Kristallografiya, 1959, Vol 4, Nr 1, pp 114 - 118 (USSR)

ABSTRACT: It is shown experimentally and theoretically that the action of impurities on the change of crystallisation parameters can lead to the operation of a single-phase (crystallisation) pressure equal in magnitude to the osmotic pressure which these impurities set up. According to Raoult's law, the change in boiling or melting point of a solution containing impurities is given by:

$$\Delta T = kT_0^2(C^I - C^{II})/q \ .$$

For the growth of crystals it can be put into the form:

$$\Delta T_i = kT_0^2(C^I - C_i^{II})/q \ ,$$

where:

On the Question of the Growth of Crystals From Systems Containing Impurities

C_i^{II} is the concentration of impurities in the i-th growth pyramid;
q is the heat of crystallisation;
ΔT is the change in the melting point;
T_o is the melting point of the solvent,
k is Boltzmann's constant and
C^I and C^{II} are the concentrations of impurity in the liquid and solid phases.

The crystallisation of alum in the presence of a blue dye (Col.Ind. 518) has been studied. Octahedral growth pyramids contain almost no impurities and remain transparent while the cube-face pyramids have substantially the same concentration of dye as the solution. A pressure can be defined by :

$$\pi = (C^I - C^{II})\frac{kT}{v^{II}}$$

On the Question of the Growth of Crystals From Systems Containing Impurities

for an osmotic pressure across a partition where v^{II} is the molecular volume of the pure solvent. If there is a pure solvent on one side then:

$$\pi = CkT/v^{II} .$$

By a thermo-dynamic argument:

$$\Delta P = kT(C^{I} - C^{II})/(v^{I} - v^{II})$$

which is to be compared with Raoult's law. This was experimentally verified by measuring the rate of growth of alum crystals at various temperatures (from 17.75 - 18.55 °C). The osmotic pressure of the dye was actually measured by the pressure exerted on a mirror of a Michaelson interferometer which caused a slight displacement of the mirror. It is concluded that the pressure should be considered as real. Acknowledgments are made to Academician A.V. Shubnikov and Doctor N.N. Sheftal' for their advice and to A.A. Fotchenkov and Kh.S. Bagdasarov for their help in experiments.

SOV/70-4-1-20/26

On the Question of the Growth of Crystals From Systems Containing Impurities

There are two tables and 6 Soviet references.

ASSOCIATION: Institut kristallografii AN SSSR (Institute of Crystallography of the Ac.Sc., USSR)

SUBMITTED: October 13, 1958

Card 4/4

24.7100

77115
SOV/70-4-6-16/31

AUTHORS: Khaimov-Mal'kov, V Ya, Perl'shteyn, V. A.

TITLE: Concerning the Effect of Furnace Temperature Gradient on the Distribution of an Impurity in a Growing Crystal

PERIODICAL: Kristallografiya, 1959, Vol 4, Nr 6, pp 904-907 (USSR)

ABSTRACT: This work was presented at the second conference on scintillators in 1957, at Khar'kov. If a molten cylindrical sample is cooled at one end (directed crystallization), a divisive effect is possible leading to the concentration of the impurity at one or the other end. The concentration C_s of the impurity along a length Z_o of the crystal may be represented by Eq. (1) if the migration is by convection and by Eq. (2) if by diffusion.

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Concerning the Effect of Furnace Temperature Gradient on the Distribution of an Impurity in a Growing Crystal

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$$C_s = kC_0\left(1-\frac{Z_0}{L_0}\right)^{k-1}. \qquad (1)$$

$$C_s = \frac{1}{2}C_0\{1+\operatorname{erf}\sqrt{\tau}-(1-2k)\exp[-4k(1-k)\tau]\times \times\{1+\operatorname{erf}[(1-2k)\sqrt{\tau}]\}\}. \qquad (2)$$

Here C_0 is the initial concentration of the impurity; k is the coefficient of trapping, equal to C_s/C_{Z_0} (C_{Z_0} being the concentration of the impurity at point Z_0); L_0 is the crystal's length; $\tau = VZ_0/4D$; V is the rate of crystallization; and D is the diffusion coefficient. Figure 1 represents the above relations for $k < 1$. The purpose of the present work is to confirm the existence of (2) experimentally.

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Concerning the Effect of Furnace Temperature Gradient on the Distribution of an Impurity in a Growing Crystal

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SOV/70-4-6-16/31

This is of interest in connection with semiconductors

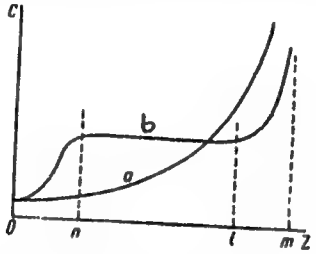

Fig. 1. Distribution of the impurity along the crystal's length: (a) with convection and (b) with diffusion mechanism of migration of the impurity in the melt.

and scintillators, due to the presence of the flat segment n1 on curve "b," Fig. 1. The effect of the temperature gradient on the impurity distribution was studied on the system KI--TlI, the latter being the

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impurity, 0.1 to 1% by wt, and containing Tl^{204}. The crystals were grown by the Stokbarger method. The furnace gradient was varied by varying the position of the heating coil or the rate of heat removal. The concentration of TlI was gaged by the β-decay of Tl^{204}. A temperature gradient of 20 to 60°/ cm gave a distribution curve similar to "a" in Fig. 1. The results with lesser gradients are shown in Figs. 3 and 4. On the basis of the results, the follow ng

Concerning the Effect of Furnace Temperature Gradient on the Distribution of an Impurity in a Growing Crystal

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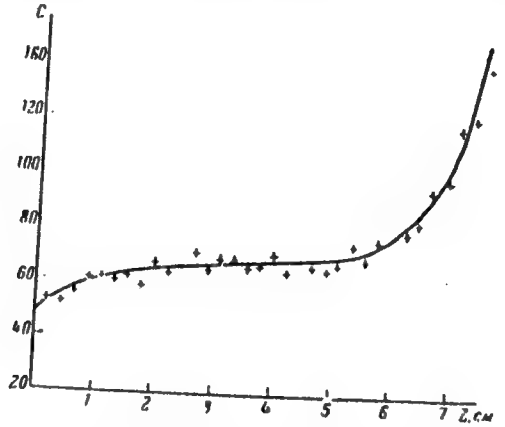

Fig. 3. Distribution of TlI along the length of the KI crystal. Temperature gradient: 10^0/cm, rate of crystallization 4 x 10^{-4}cm/sec.

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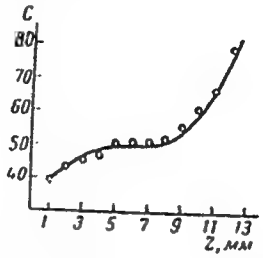

Fig. 4. Distribution of TlI along the length of the KI crystal. Temperature gradient: 10°/cm, rate of crystallization 1 x 10^{-5}cm/sec.

conclusions may be drawn. The character of the impurity distribution depends substantially on the temperature gradient. With gradients of about 10°/cm, in the case of KI, the migration is by convection, while for gradients of less than 10°/cm, it is by diffusion. The change from one mechanism to

the other occurs within a narrow range of gradient values, the range depending on the substance being crystallized. The effect of the gradient on the migration mechanism is probably through its effect on the convection and diffusion in the melt. The coefficient k was observed to decrease with increasing gradient and this decrease probably tends toward saturation. The distribution of the impurity along the diameter of a crystal grown under a low gradient was determined and, except for the first cross section (beginning of crystallization), was found to be nearly uniform, when the distribution along the length is as given in Fig. 3. The authors admit that their proof of the existence of the diffusion mechanism of impurity migration is not conclusive, but they published the results because of its possible practical application. Belyayev, L. M., Sheftal', N.N., Martynov, G. A., and Panova, V. P., are thanked for their assistance. There are

Concerning the Effect of Furnace Temperature Gradient on the Distribution of an Impurity in a Growing Crystal

77115
SOV/70-4-6-16/31

5 figures; and 10 references, 5 Soviet, 2 German, 3 U.S. The U.S. references are: W. G. Pfann, Tras. AIMM, 194, 747, 1952; R. H. Mcfee, J. Chem. Phys., 15, 856, 1947; O. W. Memelink, Philips Res. Repts, 3, 183, 1956.

ASSOCIATION: Crystallography Institute, Academy of Sciences, USSR (Institut kristallografii AN SSSR)

SUBMITTED: June 25, 1959

Card 8/8

S/070/62/007/003/015/026
E132/E460

AUTHORS: Khaimov-Mal'kov, V.Ya., Zhmurova, Z.I., Bagdasarov, Kh.S., Akulenok, Ye.M.

TITLE: On the question of the sectorial growth of crystals

PERIODICAL: Kristallografiya, v.7, no.3, 1962, 437-441

TEXT: Certain regularities in the production of macro-nonuniformities in crystals during their growth from solution are discussed. The connection between the forms of the growth pyramids and the conditions of crystallization are examined. Using the example of alums it is shown that the development of a sectorial structure is connected with the trapping by the growing crystal of mechanical impurities and with the inclusion of structural impurities. The following signs can be used to diagnose the kinds of defects in crystals. The relative rate of growth of a face which is being spoilt is, in the case of structural impurities, significantly decreased (blocking) but in the case of mechanical impurities it is significantly increased. In the first case, if the symmetry of the crystal allows it, the defective face forms the basic shape of the crystal and in

the second case it is tapered out. The degree of spoiling of the growth pyramids (degree of trapping of impurities) decreases with increasing supersaturation for structural impurities but decreases for mechanical impurities. For high concentrations of structural impurities the surface of an affected face has a specific character of peeling flakes. (Mechanical impurities are insoluble particles or colloidal bodies in suspension, structural impurities are ions or dyes in solution which enter the crystal as isomorphous replacements.) There are 8 figures.

ASSOCIATION: Institut kristallografii AN SSSR
(Institute of Crystallography AS USSR)

SUBMITTED: June 28, 1961

L 10331-63 EWA(k)/EPF(c)/EWT(l)/EWP(q)/EWT(m)/FBD/BDS/T-2/3w2/EEC(b)-2/
ES(t)-2--AFFTC/ASD/ESD-3/RADC/APGC/AFWL--Pr-4--GG/WH/JHB/WG/ä/EM/IJP(C)

ACCESSION NR: AP3001285 S/0181/63/005/006/1643/1648

AUTHOR: Manenkov, A. A.; Popova, A. A.; Khaimov-Mal'kov, V. Ya. 86

TITLE: Investigation of crystal-field inhomogeneity in the ruby 16 82

SOURCE: Fizika tverdogo tela, v. 5, no. 6, 1963, 1643-1648

TOPIC TAGS: crystal-field inhomogeneity, ruby laser, EPR-line broadening, trigonal axis dispersion

ABSTRACT: Inhomogeneous EPR-line broadening caused by local inhomogeneities of the crystal field and dispersion of the trigonal axis orientation has been used to study such inhomogeneities in the ruby and their reaction to thermal treatment. The method yielded direct information on the nature of the local crystal field around paramagnetic ions in crystals and the influence of this field on the energy levels of the ions. Relative peak intensity rather than line width was used as a measure of crystal-field inhomogeneity in various 0.05% Cr sap plus 3 ion-concentration samples. Measurements were made with an EPR radio spectroscope operating at 9400 Mc. Small samples (volume approximately 0.5 cm

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L 10331-63
ACCESSION NR: AP3001285

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sup 3) were shown to contain both local inhomogeneities and trigonal axis dispersion. Annealing at 1850C for several hours caused a considerable decrease in inhomogeneities, but additional annealing over 16 hours produced no further observable decrease. Larger samples suitable for laser applications (rods 1 cm in diameter and 12 to 20 cm in length) were shown to have considerable zoning and disorientation (up to 10 degrees) of the trigonal axis from zone to zone. It is noted that this zoning can affect the directional properties, threshold, and output power of laser emissions. "The authors express their gratitude to A. M. Prokhorov and L. M. Belyayev for useful discussion of the work." Orig. art. has: 11 formulas and 3 figures.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva AN SSSR, Moscow (Physics Institute AN SSSR)

SUBMITTED: 28Jan63 DATE ACQ: 01Jul63 ENCL: 00

SUB CODE: 00 NO REF SOV: 001 OTHER: 002

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Card 2/2

ACCESSION NR: AP4011484 S/0051/64/016/001/0058/0062

AUTHOR: Gvaladze,T.V.; Konyukhov,V.K.; Prokhorov,A.M.; Khaimov-Mal'kov,V.Ya.; Shipule,G.P.

TITLE: R-absorption lines of ruby

SOURCE: Optika i spektroskopiya, v.16, no.1, 1964, 58-62

TOPIC TAGS: R absorption, R levels, R line luminescence, ruby, optical pumping, lasers, luminescence lifetime

ABSTRACT: Although there have been many investigations of the luminescence of R-lines of ruby, hitherto there have been no detailed studies of the absorption in the region of these lines. Study of the absorption can yield information on the frequency variation of the absorption coefficient, $\alpha(\nu)$, and the temperature dependence of $\int\alpha(\nu)d\nu$, which is indicative of the temperature variation of the matrix element of the dipole moment. In the present work the R-line absorption of ruby (Cr_2O_3 concentration 0.04% by weight) was investigated at 16, 60, and 95°C. The measurements were performed with the aid of a DFS-13 diffraction grating spectrograph (dispersion 4 Å/mm) with photographic recording and a DFS-8 grating spectrograph (6 Å/mm) with

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ACC.NR: AP4011484

photoelectric recording. The values of $\alpha(\nu)$ for the R_1 and R_2 lines are 0.315 and 0.24, respectively, and are virtually temperature independent in the 16 to 95°C temperature range. Reabsorption was found to be negligible under the given conditions. The luminescence lifetimes of the R_1 and R_2 lines, calculated on the basis of the experimental data, are of the order of 2.9 and 4.2 microsec, respectively. The relative intensities of the R luminescence lines are proportional to the populations of the respective levels and inversely proportional to $\alpha(R)$. The R_2/R_1 intensity ratio for T = 93°K, derived from the present data, is about 0.43, which is in exact agreement with the experimental value of N.A.Tolstoy, Liu Shun-fu, and M.E.Lapidus (Opt.i spektro.,13, 242, 1962). Orig.art.has: 14 formulas, 2 tables, and 1 figure.

ASSOCIATION: none

SUBMITTED: 18Mar63 DATE ACQ: 14Feb64 ENCL: 00

SUB CODE: PH NR REF SOV: 003 OTHER: 005

Card 2/2

KHAIMOV-MAL'KOV, V.Ya.; BAGDASAROV, Kh.S.; AKULENOK, Ye.M.

Relation between the intensity distribution in a ruby laser and defects in the crystals. Kristallografiia 8 no.6:925-926 N-D'63. (MIRA 17:2)

1. Institut kristallografii AN SSSR.

ZHMUROVA, Z.I.; KHAIMOV-MAL'KOV, V.Ya.; AKULENOK, Ye.M.; BAGDASAROV, Kh.S.

Distribution of an isomorphic impurity in crystals of $Zn(NH_4)_2(SO_4)_2 \cdot 6H_2O$ and K_2SO_4 during crystallization.
Kristallografiia 8 no.6:936-937 N-D'63. (MIRA 17:2)

1. Institut kristallografii AN SSSR.

L 2 [illegible]-66 EWA(k)/FSD/EWT(l)/EWP(e)/EWI(m)/EEC(k)-2/EWP(i)/T/EWP(k)/EWA(m)-2/EWA(h)
ACC NR: AP5025788 SCTB/IGF(c) WG/WH SOURCE CODE: UR/0363/65/001/009/1521/1525

AUTHOR: Voron'ko, Yu. K.; Kaminskiy, A. A.; Osiko, V. V.; Khaimov-Mal'kov, V. Ya.

ORG: Institute of Crystallography, Academy of Sciences, SSSR (Institut kristallografii Akademii nauk SSSR); Physics Institute im. P. N. Lebedev, Academy of Sciences, SSSR (Fizicheskiy institut Akademii nauk SSSR)

TITLE: Investigation of the optical inhomogeneity of $CaF_2:Dy^{3+}$ laser crystals

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 1, no. 9, 1965, 1521-1525

TOPIC TAGS: laser, solid state laser, laser rod, laser crystal, fluorite, fluorite laser, optical inhomogeneity, excitation threshold

ABSTRACT: Experiments were performed to determine the effect of different types of optical inhomogeneities on the excitation threshold of CaF_2 laser rods doped with 0.5% Nd^{3+}. Crystals 150 mm long with a 15-mm diameter were grown from the same melt under identical conditions and had the same concentration of active impurities. Th..teen laser rods, each about 73 mm long and 6.5 mm in diameter, were fabricated from the crystals. Measurements of the excitation threshold, the gradient of the index of refraction, the local inhomogeneities, and small angle scattering showed that the optical defects differed from crystal to crystal. These differences were attributed to minute, uncontrollable variations in the temperature regime during the growth process and to differences in the crystallographic orientation of the growing crystals. It was estab-

Card 1/2 UDC: 546.41'161:548.55

L 3725-66

ACC NR: AP5025788

lished that the scattering angle of a beam from a He-Ne laser directed along the geometrical axis of the rod shows the greatest amount of correlation with the excitation threshold of the laser rod. This parameter should therefore be used in selecting the $CaF_2:Nd^{3+}$ crystal rods to be used in lasers. Orig. art. has: 4 figures and 1 table.

SUB CODE: SS/ SUBM DATE: 02Jun65/ ORIG REF: 008/ OTH REF: 000/ ATD PRESS: 4120

[CS]

Card 2/2

VORON'KO, Yu.K.; KAMINSKIY, A.A.; OSIKO, V.V.; KHAIMOV-MAL'KOV, V.Ya.

Optical homogeneity of $CaF_2 - Nd^{3+}$ laser crystals. Izv. AN SSSR. Neorg. mat. 1 no.9:1521-1525 S '65. (MIRA 18:11)

1. Institut kristallografii AN SSSR i Fizicheskiy institut imeni Lebedeva AN SSSR.

MOLLOV, N.; HAIMOVA, M. [Khaimova, M.]; TSCHERNEVA, P. [Cherneva, P.]; PECIGARGOVA, N. [Pechigargova, N.]; OGNJANOV, I. [Ognianov, I.]; PANOV, P.

Alkaloids of Aconitum ranunculaefolium. Doklady BAN 17 no.3: 251-254 '64.

1. Vorgelegt von B.Kurtev, korr. Mitglied d. Akademie.

BEROVA, N.; STEFANOVSKY, J. [Stefanovski, I.]; KURTEV, B.; CHAIMOVA, M. [Khaimova, M.]; MOLLOV, N. [Molov, N.]

Synthesis and separation of l-menthyl ester of the 3-amino-2,3-diphenylpropane acids, and their reduction into optically active 1-amino-1,2-diphenylpropanol. Doklady BAN 17 no.1:41-44 '64

KHAIMOVA, M. A., TEMNIKOVA, T. I., and BASKOVA, Z. A.

On the Addition of Iodine Chloride to α,γ-Diphenylpropylene and α,β-Diphenylethylene, page 874, Sbornik statey po obshchey khimii (Collection of Papers on General Chemistry), Vol II, Moscow-Leningrad, 1953, pages 1680-1686.

Chair of the Structure of Organic Compounds, Leningrad State U

KHAIMOVA, M. A.

USSR. CH (2)

Addition of iodine chloride to 1,1-diphenylpropene and 1,1-diphenylethylene. T. I. Temnikova, Z. A. Baskova, and M. A. Khaimova (Leningrad State Univ.). *Sborník Statei Obshchei Khim.* 2, 874-7(1954).—To 7 g. $Ph_2C:CHMe$ in $CHCl_3$ was added with ice cooling 14.6 g. ICl in $CHCl_3$; a ppt. of I shine was observed and considered to HCl evolved. After [illegible] the mixt. was washed with Na_2SO_3, [illegible] 0.45 g. iodine in the soln. and the org. layer [illegible] after long standing; the 1.6181, n_D^{20} 1.600. Ozonolysis of this requires 2 days because of very slow reaction with O_3; $BzPh$ and $BzOH$ were obtained thus proving the structure. Apparently the addn. of I [illegible] which lost HI and yielded [illegible] org. layer a dark oil, which could not be distd. because of evolution of iodine and decompn. on heating. This oil with 10% alc. KOH gave 3.5 g. $Ph_2C:CHI$, b. 128-30°, [illegible], n_D^{20} 1.6212, ozonolyses yielded $BzPh$. Thus in this reaction the initial product was Ph_2CCiCH_2I.

G. M. Kos

KHIMOVA, M H

Addition of iodine chloride to unsymmetric diphenylethylene hydrocarbons. II. Addition of iodine chloride to 1,1-di-*p*-tolylpropene. M. A. Khaimova. *Zhur Obshchei Khim.* 25, 387–91(1955). (Engl. translation); cf. *C.A.* 40, 6889e.—$AlCl_3$ (90 g.), 280 ml. CCl_4, and 143 ml. MeEt gave 23% R_2CO (R = *p*-tolyl), m. 64–5°; this with EtMgBr gave R_2CEtOH, dehydrated with 20% H_2SO_4 to 43% $R_2C:CHMe$, bp 199–200°, b_6 163–9°, m. 37–8°, n_D^{20} 1.5790, which was further purified by passage through Al_2O_3 and elution by petr. ether. Oxidation with CrO_3–H_2SO_4 gave R_2CO. The pure hydrocarbon (24.11 g.) in 50 ml. $CHCl_3$ treated with 55.84 g. ICl in 50 ml. $CHCl_3$, and the mixt. washed after 3 days with $Na_2S_2O_3$, chromatographed on Al_2O_3, and eluted with petr. ether, C_6H_6, and $CHCl_3$ gave 4 fractions, with n_D^{20} 1.5936, 1.5935, 1.5935, and 1.5934, distillation gave an oil, $b_{4.5}$ 133–5°, n_D^{20} 1.5822, which solidified in 2 months and m. 43.5–4°. Ozonolysis of this gave R_2CO and *p*-AcC_6H_4Me, along with *p*-toluic acid, $(CO_2H)_2$, and possibly AcOH. Thus the main reaction product was $R_2C:CClMe$ with a small admixt. of RCCl:CRMe, probably formed through a rearrangement. G. M. K.

KHAIMOVA, M.A.; KURTEV, B.Y.

Reactions of some arylated ethylenic hydrocarbons with iodine chloride, and the pinacolin-type rearrangement of their 1-iodo-2-methoxy derivatives. Dokl. AN SSSR 135 no.5:1153-1156 D '60. (MIRA 13:12)

1. Institut organicheskoy khimii Bolgarskoy AN. Predstavleno akademikom B.A.Kazanskim.

(Iodine chloride) (Ethylene) (Propene)

KHAIMOVA, M.A.; KURTEV, B.Y.; BEZUKHANOVA, TS.P.

Production and reactivity of certain arylated β-iodo ethers.
Dokl. AN SSSR 143 no.6:1374-1377 Ap '62. (MIRA 15:4)

1. Kafedra organicheskoy khimii Sofiyskogo gosudarstvennogo universiteta, Sofiya, Bolgariya. Predstavleno akademikom B.A.Kazanskim.

(Ethers) (Iodine compounds)

KUKLES, I.S.; AHAIMOVA, P.L.

Studying the behavior of surfaces determined by the Pfaff equation near a point at infinity. Trudy Sam. Gos. un. no.144:49-62 '64. (MIRA 18:9)

KHAIMOVA, P. L.

Khaimova, P. L. -- "On the Surfaces Determined by the Equations of Pfaff." Acad Sci Uzbek SSR, Inst of Mathematics and Mechanics imeni V. I. Romanovskiy, Stalinabad, 1955. (Dissertations for Degree of Doctor of Physicomathematical Sciences)

SO: Knizhnaya Letopis', No. 23, Moscow, pp. 87-104.

KHAIMOVA-MAL'KOVA, R.I.; TRUMBACHEV, V.F., otv. red.; POLYAKOVA, Z.V., red.

[Methodological manual on investigating stresses by the optical method] Metodicheskoe rukovodstvo po issledovaniiu napriazhenii opticheskim metodom. Moskva, In-t gornogo dela im. A.A.Skochinskogo, 1963. 66 p. (MIRA 18:4)

KHAIMOVA-MAL'KOVA, R.I.

Effect of the coefficient of lateral thrust on the stability of various kinds of openings. Nauch.soob. IGD 22:64-75 '63. (MIRA 17:5)

MATVEYEV, V.A. (Moskva); TRUMBACHEV, V.F. (Moskva); KHAIMOVA-MAL'KOVA, R.I. (Moskva)

Determining rock deformation allowing for cleavage and stratification in the vicinity of stopes. Izv. AN SSSR. Otd. tekh. nauk. Met. i topl. no.1:171-179 Ja-F '62. (MIRA 15:2)
(Mining geology)
(Rock pressure)

ACC NR: AT7002127 (A) SOURCE CODE: UR/0000/66/000/000/0431/0487

AUTHOR: Khaimová-Mal'kova, R. I.

ORG: none

TITLE: Use of models of optically active material ("agarin") to investigate the nature of rock failure around mine workings

SOURCE: Vsesoyuznaya konferentsiya po polyarizatsionno-opticheskomu metodu issledovaniya napryazheniy. 5th, Leningrad, 1964. Polyarizatsionno-opticheskiy metod issledovaniya napryazheniy (Polarizing-optical method of investigating stresses); trudy konferentsii. Leningrad, Izd-vo Leningr. univ., 1966, 481-487

TOPIC TAGS: mining engineering, stress analysis, optic analysis, model

ABSTRACT: Models of variously shaped mine workings (elliptical, circular, rectangular, square, arched, and trapezoidal), with different horizontal to vertical ratios and different values of lateral thrust have been studied by means of optically active material ("agarin"). The "agarin" was prepared from agar-agar (1—5%), glycerin (5%), and distilled water. It was found that failure of elliptical and arched workings with a large vertical axis required a load approximately twice that for trapezoidal and elliptical workings with the horizontal axis greater than the vertical. In openings with a circular form, roof fractures appear first in the middle of the

Card 1/2

ACC NR: AT7002127

roof and are vertical. In workings with flat roofs, the fractures appear near the corners and are curved toward the center of the roof. At a lateral thrust of 0.6, rock failure in arched and trapezoidal openings begins in the side walls at places of greatest normal stress (σ_y) and tangential stress, where tensional stresses are also maximal. Fractures appear parallel to the walls. Destructive loading for circular openings proves to be about the same as for trapezoidal openings at a lateral thrust of 1. Experiments with stratified models were also made, using square openings. With relatively thin layers, the "beds" served somewhat as beams with their tensional stresses, and failure was found to begin generally in the roof. With thicker layers, failure resembles more the type observed in massive rocks, occurring from the sides. The destructive load declines with increase in thickness of layers. For a ratio of 1:3 (thickness of layer:height of opening), this load is 70% of the destructive load for massive rock. For a ratio of 1:6, the load is but 30% that for massive rock. Orig. art. has: 5 figures and 1 table. (W. A. 101)

SUB CODE: 20, 08/ SUBM DATE: 14Jun66/ ORIG REF: 005/ OTH REF: 002

Card 2/2

KHAIMOVSKAYA, Kh.S.

Work of the food laboratory of the sanitary and epidemiological station of Iaroslavl. Vop. pit. 20 no.6:63-66 N-D '61. (MIRA 15:6)

1. Iz pishchevogo otdeleniya laboratorii Gorodskoy sanitarno-epidemiologicheskoy stantsii, Yaroslavl'.
(YAROSLAVL--FOOD SUPPLY--HYGIENIC ASPECTS)

BELKIN, Ya.M., kand.tekhn.nauk; GEKHT, S.I., inzh.; KHAIMSKIY, A.M., inzh.

Determining the actual moisture of a lime-sand mixture made with ground unslaked lime. Sbor.trud.ROSNIIMS no.19:3-5 '61. (MIRA 16:1)

(Sand-lime products)

KHAIMSKIY, N.; BRUTMAN, G.; TREST, A.

The PR-5 voltameter. Radio no.4:40 Ap '62. (MIRA 15:4)
(Voltameter)

BELKIN, Ya.M., kand.tekhn.nauk; KHAIMSKIY, Z.M., inzh.

Study of thermal conditions of the hardening of silicate concrete during autoclave treatment of sand-lime products. Sbor. trud. ROSNIIMS no.20:62-69 '61. (MIRA 16:1)
(Sand-lime products)

KHAIMZON, B.I.

Using the phage titer growth reaction in diagnosing dysentery in adults. Zhur. mikrobiol., epid. i immun. 33 no.1:98-99 Ja '62. (MIRA 15:3)

1. Iz Voronezhskogo meditsinskogo instituta.
(DYSENTERY)
(BACTERIOPHAGE)

ALLAKHVERDIBEKOV, G.B., dotsent; KHAIN, A.G., assistent

"Pharmacology" by V.V. Zakusov. Reviewed by G.B. Allakh-verdibekov, A.G. Khain. Azerb. med. zhur. no.7:83 Jl '63.
(MIRA 17:1)

GOL'BERG, I.K. [deceased]; KHAIN, A.G.

Study of the toxic effect of preparations from the Azerbaijanian cyclamen (Primrose family) and their influence on the organs of blood circulation. Azerb.med.zhur. no.3:52-56 Mr '60.
(MIRA 13:6)

(CYCLAMEN--TOXICOLOGY)

LILIYENBERG, Dmitriy Anatol'yevich; KHAIN, B.Ye., otv. red.;
VOLYNSKAYA, V.S., red. izd-va; GUS'KOVA, O.M., tekhn. red.

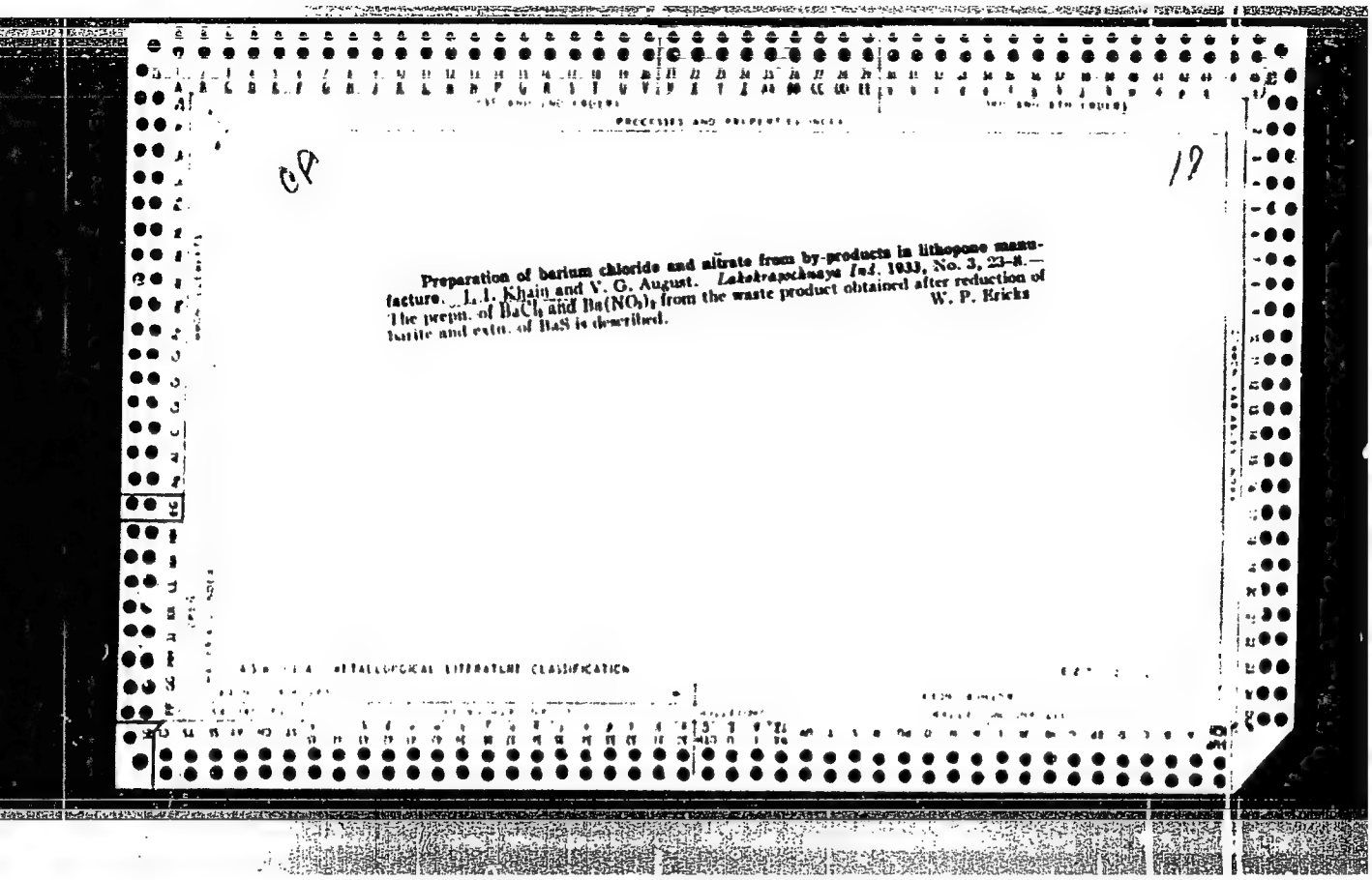
[Relief of the southern slope of the eastern part of the Greater Caucasus] Rel'of iuzhnogo sklona vostochnoi chasti Bol'shogo Kavkaza. Moskva, Izd-vo Akad. nauk SSSR, 1962. 243 p. (MIRA 15:3)

(Caucasus--Landforms)

KHAIN, G.Ye.

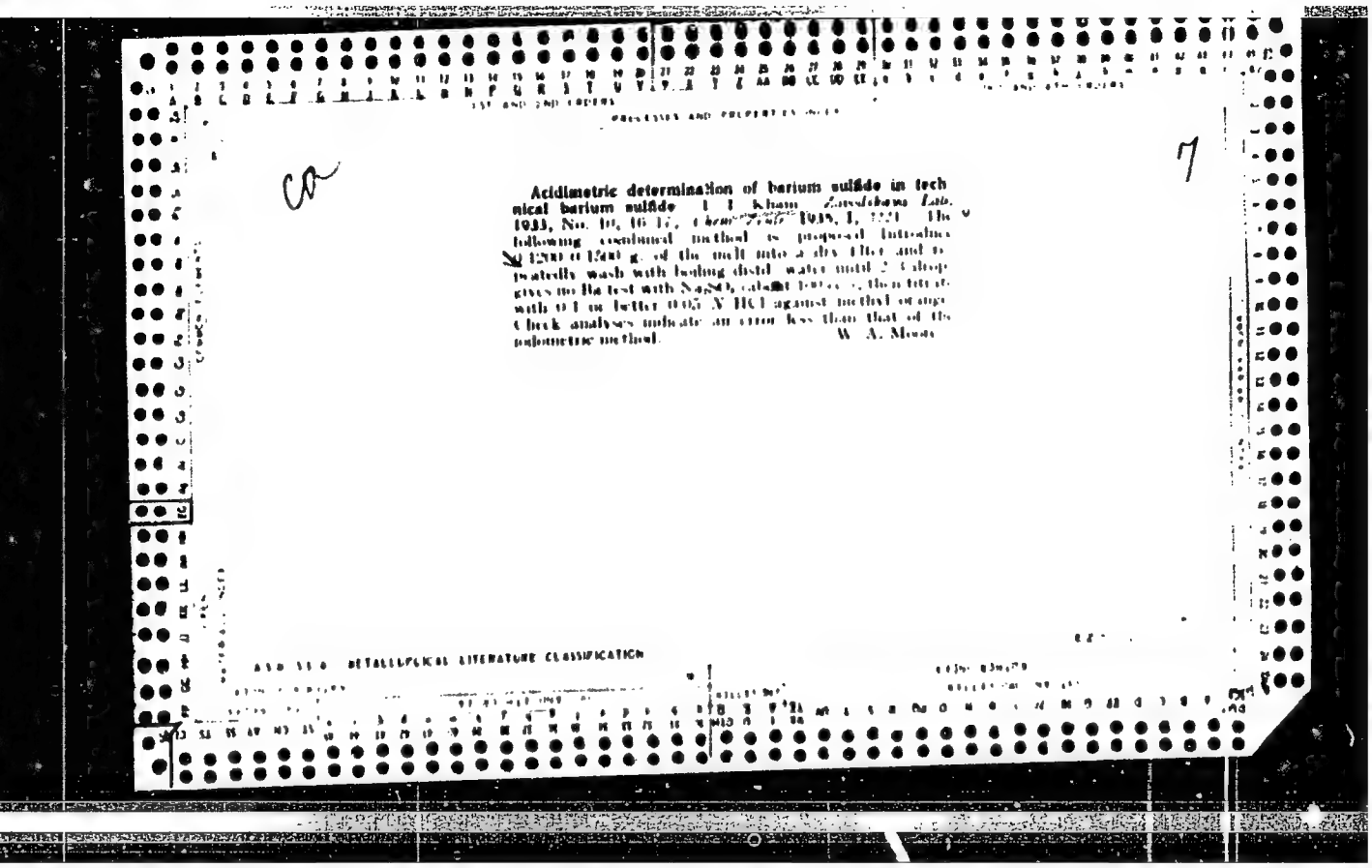
Controlling Botkin's disease. Zhur.mikrobiol.epid. i immun. 29 no.4:25-26 Ap '58. (MIRA 11:4)

1. Iz Chernovitskogo meditsinskogo instituta.
(HEPATITIS, INFECTIOUS, prevention and control.
(Rus)



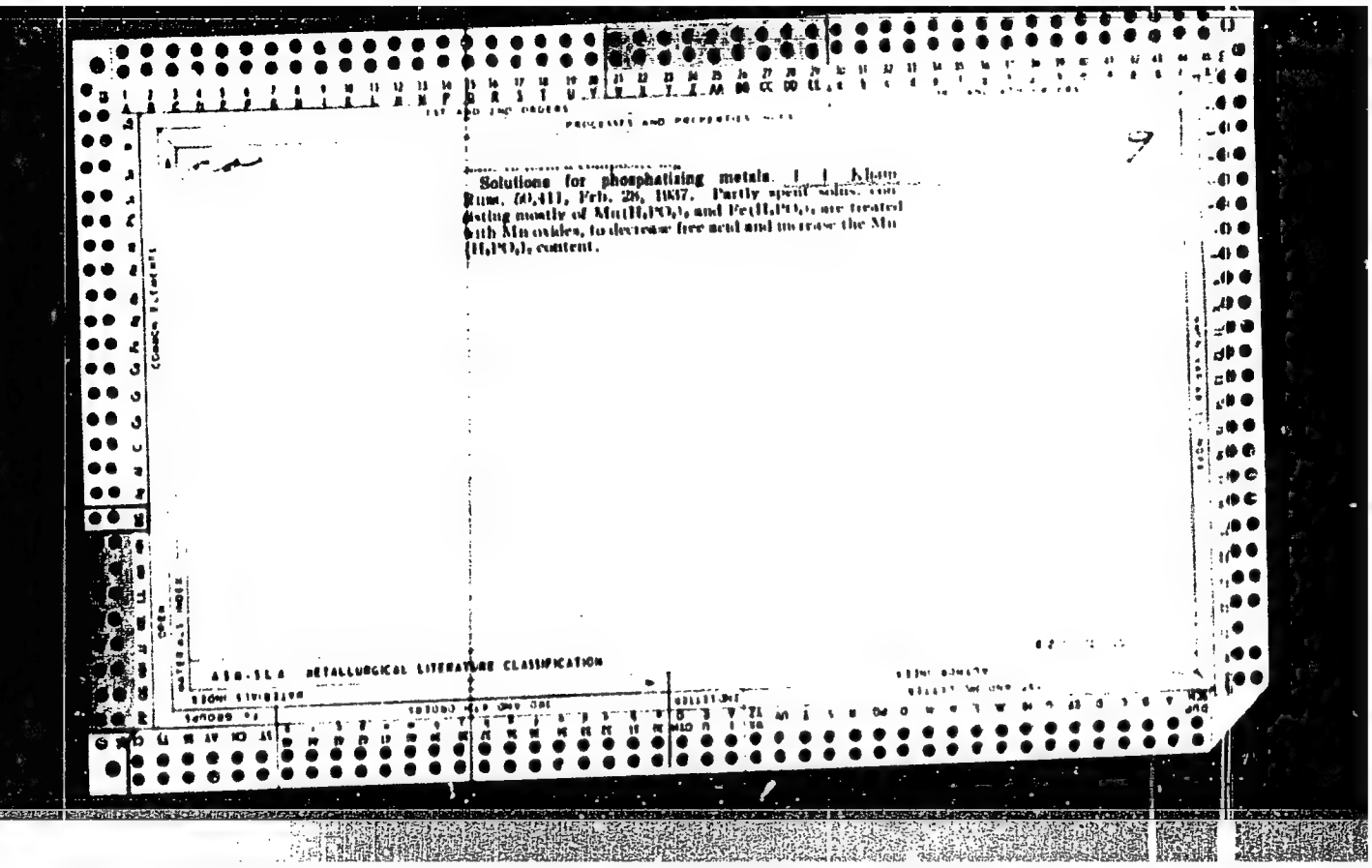
Preparation of barium chloride and nitrate from by-products in lithopone manufacture. L. I. Khain and V. G. August. *Lakokrasochnaya Ind.* 1933, No. 3, 23–8.—The prepn. of $BaCl_2$ and $Ba(NO_3)_2$ from the waste product obtained after reduction of barite and extn. of BaS is described.

W. P. Ericks



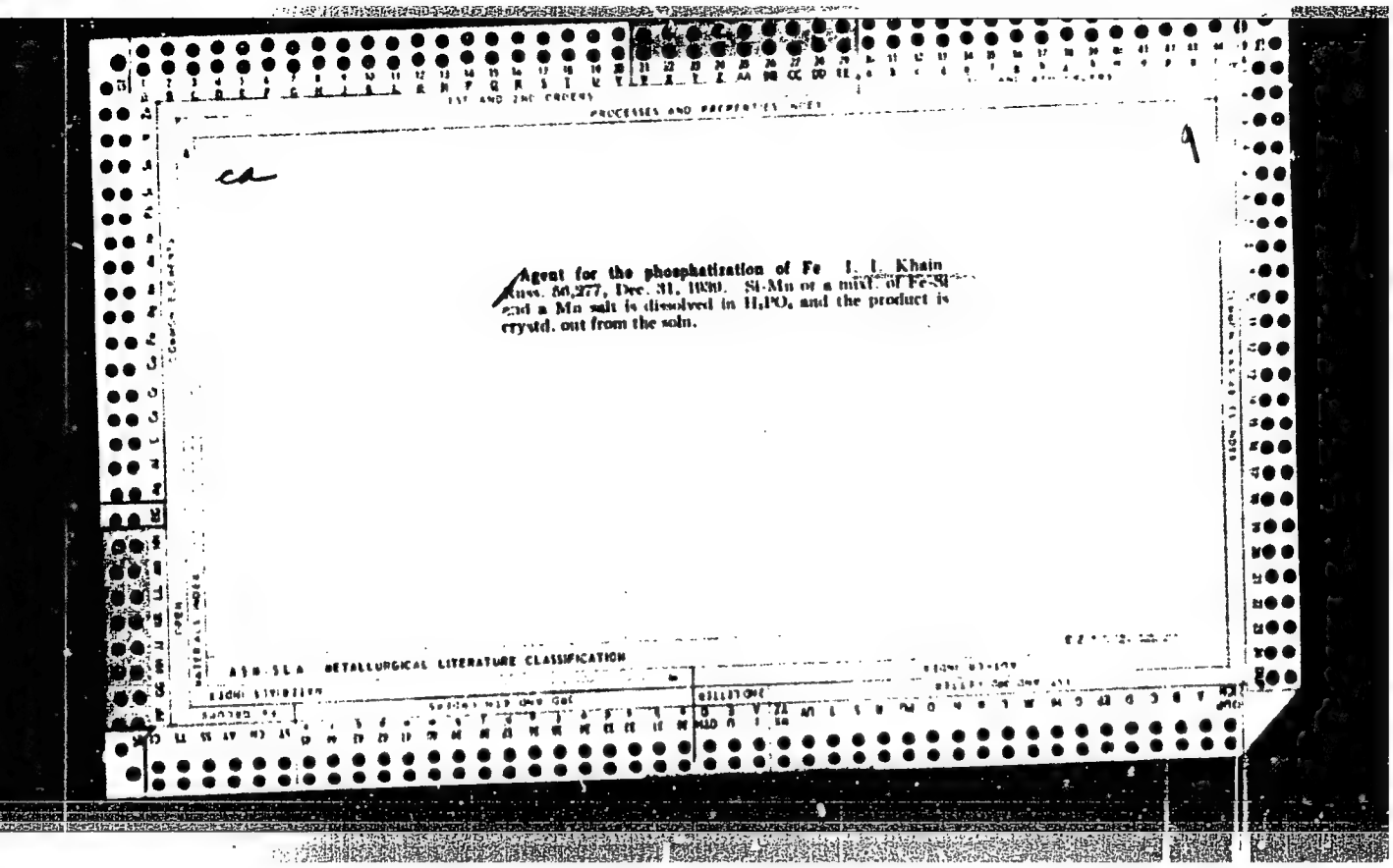
Acidimetric determination of barium sulfide in technical barium sulfide I. I. Khan. *Zavodskaya Lab.* 1933, No. 10, 16-17; *Chem. Zentr.* 1934, I, 1221. The following combined method is proposed. Introduce 1.2500 to 1.2502 g. of the melt into a 250-cc. flask and repeatedly wash with boiling distd. water until 2 drops gives no Ba test with Na_2SO_4; cool, titrate with 0.1 *N* or better 0.05 *N* HCl against methyl orange. Check analyses indicate an error less than that of the gasometric method. W. A. Moore

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721710003-0"



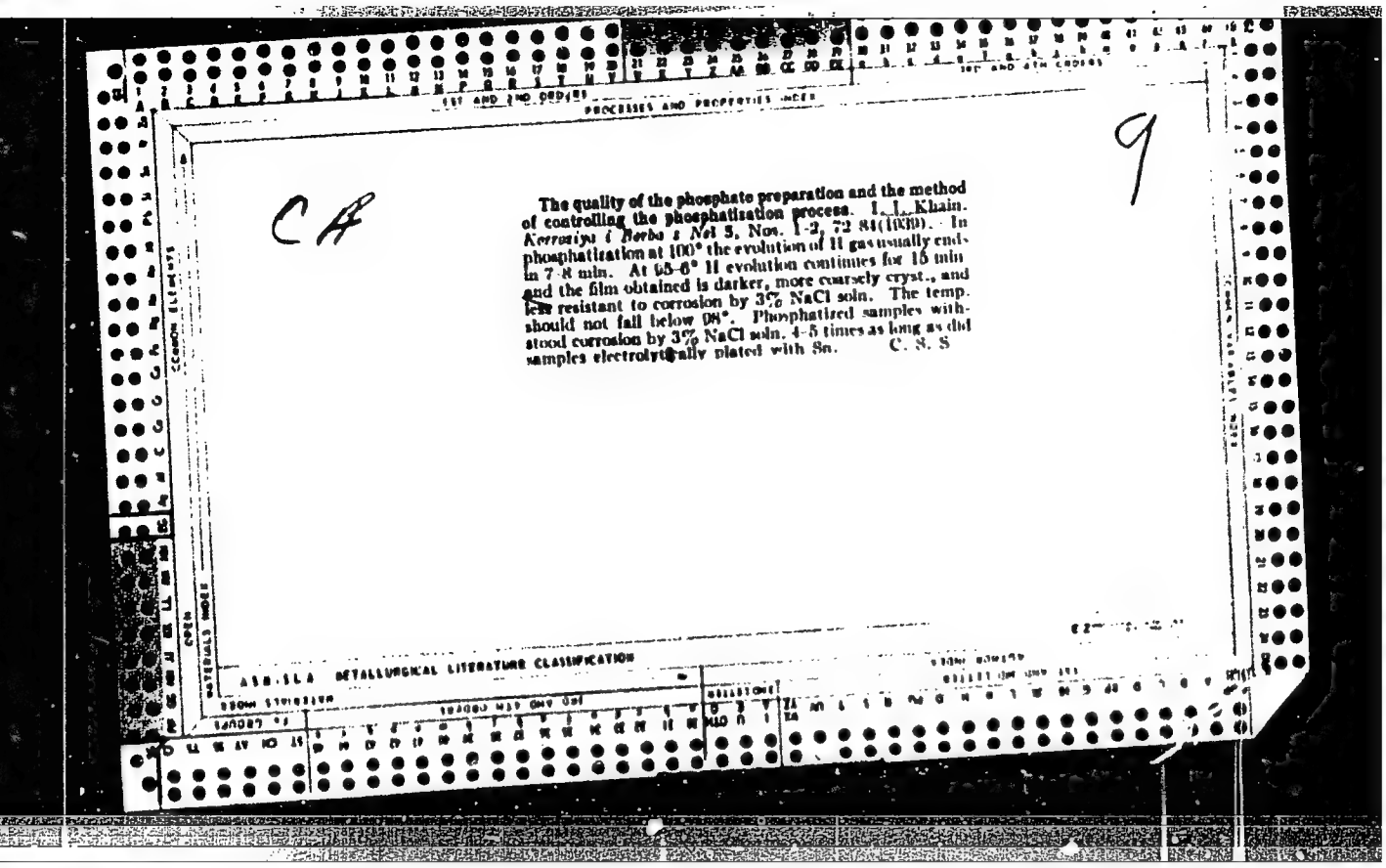
Solutions for phosphatizing metals. [illegible] Klaus Rus. (G), 411, Feb. 28, 1957. Partly spent solns. consisting mostly of $Mn(H_2PO_4)_2$ and $Fe(H_2PO_4)_2$ are treated with Mn oxides, to decrease free acid and increase the $Mn(H_2PO_4)_2$ content.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



Agent for the phosphatization of Fe I. I. Khain Russ. 50,277, Dec. 31, 1939. Si-Mn or a mixt. of Fe-Si and a Mn salt is dissolved in H_3PO_4 and the product is crystd. out from the soln.

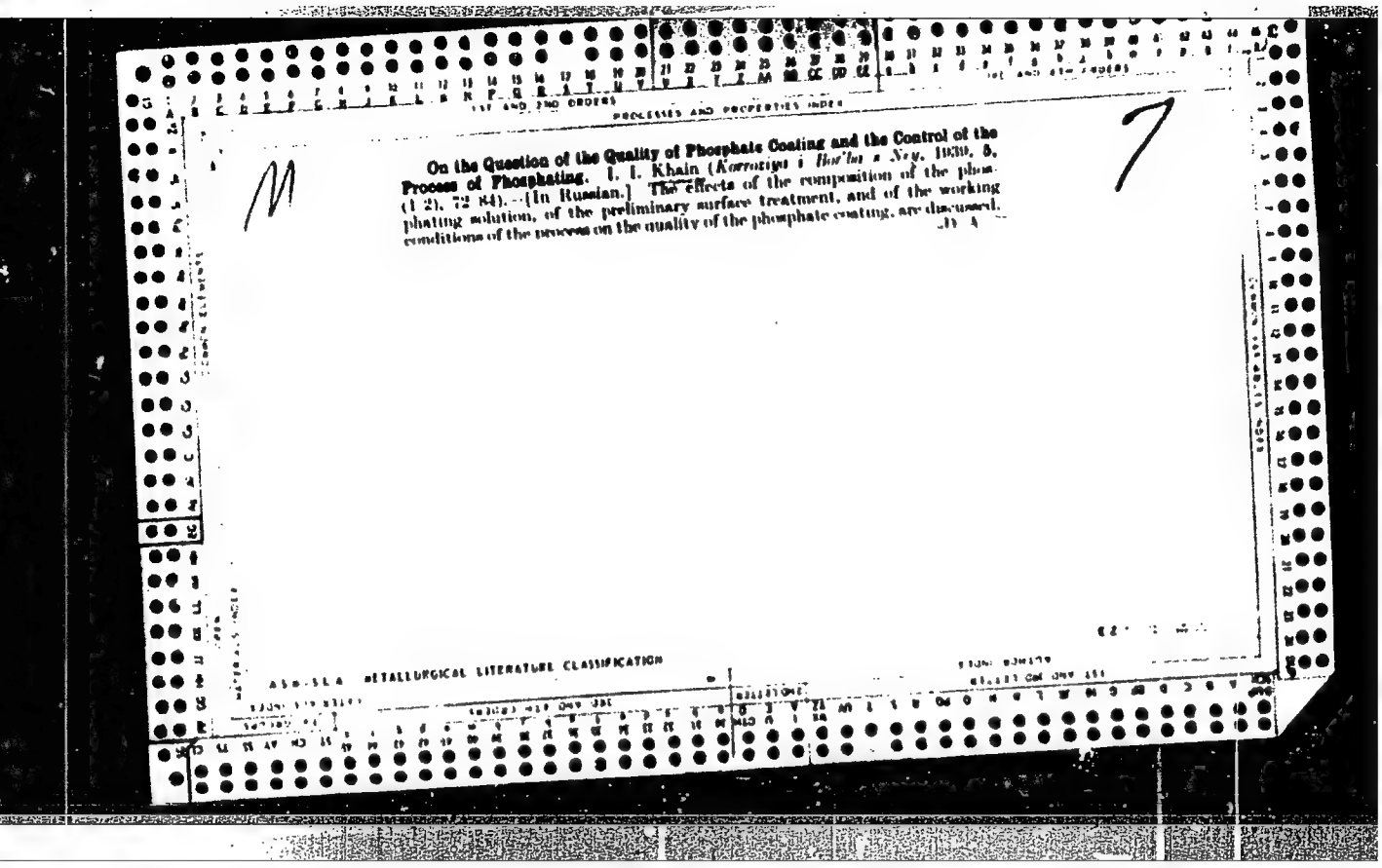
A38-S1A METALLURGICAL LITERATURE CLASSIFICATION



CA

9

The quality of the phosphate preparation and the method of controlling the phosphatization process. I. L. Khain. *Korroziya i Borba s Nei* 5, Nos. 1-2, 72-84(1939). In phosphatization at 100° the evolution of H gas usually ends in 7-8 min. At 95-6° H evolution continues for 15 min and the film obtained is darker, more coarsely cryst., and less resistant to corrosion by 3% NaCl soln. The temp. should not fall below 98°. Phosphatized samples withstood corrosion by 3% NaCl soln. 4-5 times as long as did samples electrolytically plated with Sn. C. S. S



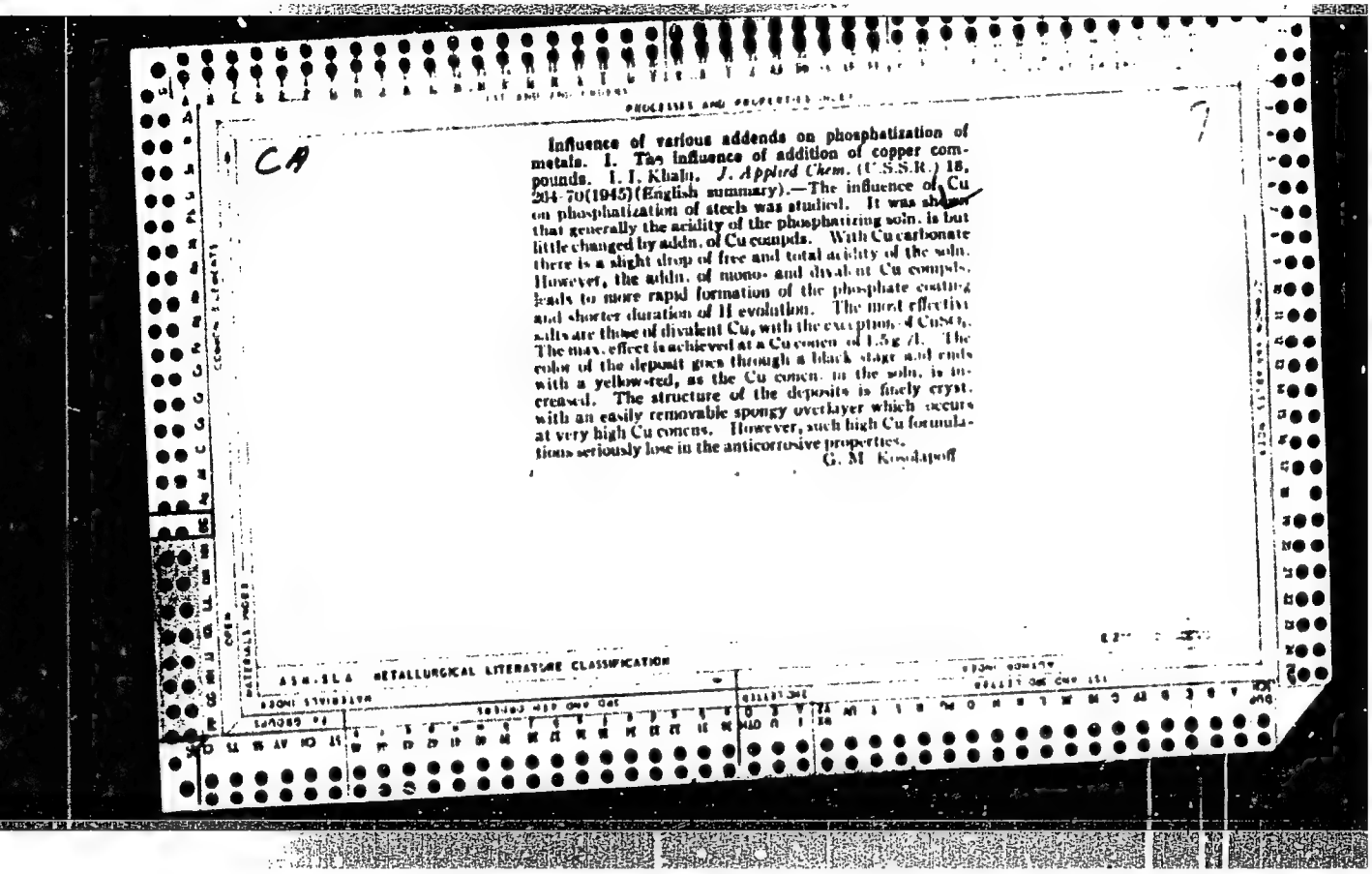
PROCESSES AND PROPERTIES INDEX

M

7

On the Question of the Quality of Phosphate Coating and the Control of the Process of Phosphating. I. I. Khain (*Korroziya i Bor'ba s Nei.* 1939, 8, (1-2), 72-84).—[In Russian.] The effects of the composition of the phosphating solution, of the preliminary surface treatment, and of the working conditions of the process on the quality of the phosphate coating, are discussed.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



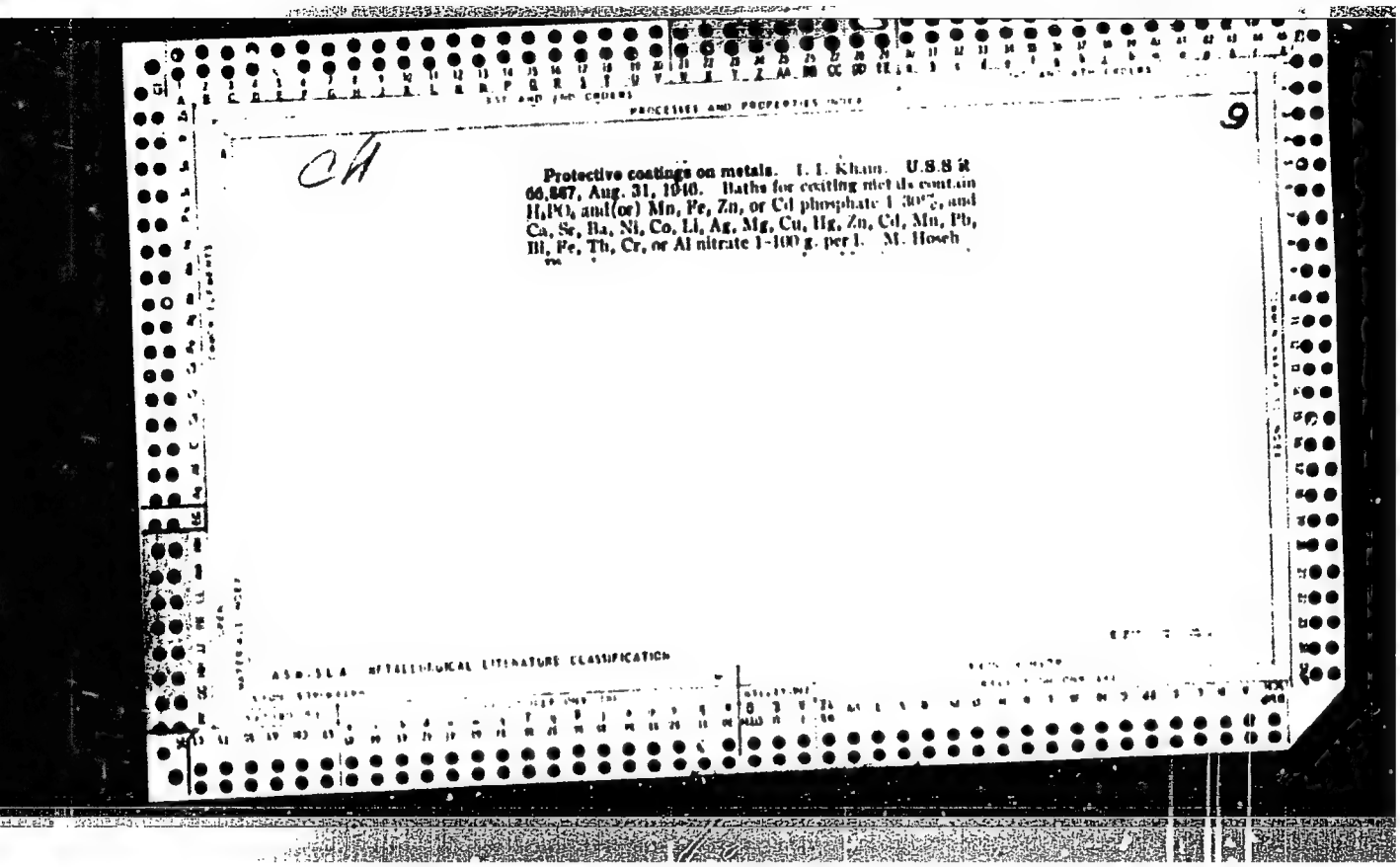
CA

7

Influence of various addends on phosphatization of metals. I. The influence of addition of copper compounds. I. I. Khalji. *J. Applied Chem.* (U.S.S.R.) 18, 204-70(1945)(English summary).—The influence of Cu on phosphatization of steels was studied. It was shown that generally the acidity of the phosphatizing soln. is but little changed by addn. of Cu compds. With Cu carbonate there is a slight drop of free and total acidity of the soln. However, the addn. of mono- and divalent Cu compds. leads to more rapid formation of the phosphate coating and shorter duration of H evolution. The most effective salts are those of divalent Cu, with the exception of $CuSO_4$. The max. effect is achieved at a Cu concn. of 1.5 g./l. The color of the deposit goes through a black stage and ends with a yellow-red, as the Cu concn. in the soln. is increased. The structure of the deposits is finely cryst. with an easily removable spongy overlayer which occurs at very high Cu concns. However, such high Cu formulations seriously lose in the anticorrosive properties.

G. M. Kosolapoff

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

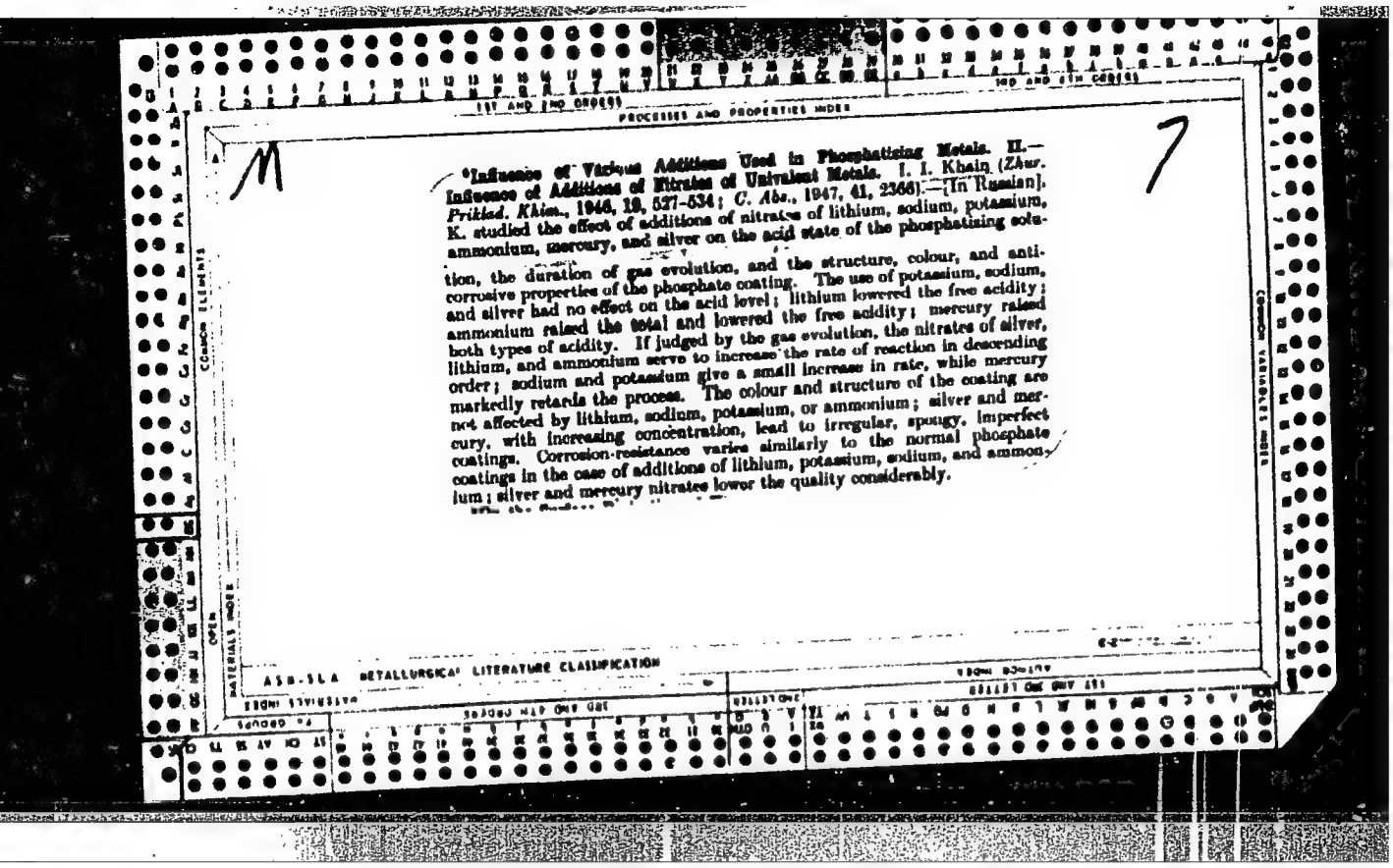


CH

9

Protective coatings on metals. I. I. Kham. U.S.S.R. 66,887, Aug. 31, 1940. Baths for coating metals contain H_3PO_4 and(or) Mn, Fe, Zn, or Cd phosphate 1-30%, and Ca, Sr, Ba, Ni, Co, Li, Ag, Mg, Cu, Hg, Zn, Cd, Mn, Pb, Bi, Fe, Th, Cr, or Al nitrate 1-100 g. per l. M. Hosch

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



PROCESSES AND PROPERTIES INDEX

M

7

Influence of Various Additions Used in Phosphatising Metals. II.—Influence of Additions of Nitrates of Univalent Metals. I. I. Khain (*Zhur. Prikład. Khim.*, 1946, 19, 527–534; *C. Abs.*, 1947, 41, 2366).—[In Russian]. K. studied the effect of additions of nitrates of lithium, sodium, potassium, ammonium, mercury, and silver on the acid state of the phosphatising solution, the duration of gas evolution, and the structure, colour, and anti-corrosive properties of the phosphate coating. The use of potassium, sodium, and silver had no effect on the acid level; lithium lowered the free acidity; ammonium raised the total and lowered the free acidity; mercury raised both types of acidity. If judged by the gas evolution, the nitrates of silver, lithium, and ammonium serve to increase the rate of reaction in descending order; sodium and potassium give a small increase in rate, while mercury markedly retards the process. The colour and structure of the coating are not affected by lithium, sodium, potassium, or ammonium; silver and mercury, with increasing concentration, lead to irregular, spongy, imperfect coatings. Corrosion-resistance varies similarly to the normal phosphate coatings in the case of additions of lithium, potassium, sodium, and ammonium; silver and mercury nitrates lower the quality considerably.

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

KHAIN, I.I.

VAYNER, Ya.V., laureat Stalinskoy premii kandidat tekhnicheskikh nauk; DASOYAN, M.A., kandidat tekhnicheskikh nauk; DRINBERG, A.Ya., laureat Stalinskoy premii doktor tekhnicheskikh nauk, professor; TARASENKO, A.A., laureat Stalinskoy premii, inzhener; KHAIN, I.I., inzhener; BOGORAD, I.Ya., laureat Stalinskoy premii.kandidat tekhnicheskikh nauk, retsenzent; SHKODZE, A.A., kandidat tekhnicheskikh nauk, retsenzent; YAMPOL'SKIY, A.M., inzhener, retsenzent; TIKHOMIROV, A.A., inzhener, retsenzent; FEDOT'YEV, N.P., laureat Stalinskoy premii doktor tekhnicheskikh nauk, professor, redaktor; GUREVICH, Ye.S., kandidat tekhnicheskikh nauk, redaktor; DLUGOKAN-SKAYA, Ye.A., tekhnicheskiy redaktor

[Handbook on protective and decorative coatings] Spravochnik po zashchitno-dekorativnym pokrytiiam. Pod red. N.P.Fedot'eva. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1951. 480 p. [Microfilm] (MLRA 10:7)

(Protective coatings)

KHAIN, I.I.

AUTHOR: Khain, I.I., Engineer, 28-6-28/40

TITLE: On the quality of the Preparation for Phosphate-Coating of Metals (O kachestve preparata dlya phosphatirovaniya metallov)

PERIODICAL: Standartizatsiya, 1957, # 6, p 72 (USSR)

ABSTRACT: The "mazhef" salt, which is manganese-iron phosphate as standardized by "ГОСТ 6193-52"-standard, is of low quality; the phosphate films formed from its solutions have poor anticorrosion properties and the solutions are quickly exhausted.

The author points to the conditions stipulated in the standard that cause such deficiencies: the iron content is allowed in a range from 0.3 to 3.0%; of manganese - at least 14%; the valency of the phosphoric iron is not indicated; the content of free acid in the solution is not given.

AVAILABLE: Library of Congress

Card 1/1 1. Industry-USSR 2. Magenese iron phosphate-Standards

KHAIN, I. I.

32-7-32/49

AUTHOR: Khain, I. I.

TITLE: Determination of the Strength and of the Microgeometry of a Phosphate Thin Film when Using a Profilograph
(Opredeleniye tolshchiny i mikrogeometrii fosfatnoy plenki s primeneniyem profilografa)

PERIODICAL: Zavodskaya Laboratoriya, 1957, Vol. 23, Nr 7, pp. 864 - 866 (USSR)

ABSTRACT: The profilographic method is based upon the following conditions: A phosphate thin film consisting of a larger number of crystals, which have grown together, and depending on their dimensions, has different strengths and different microgeometrical surface properties. The growth of the crystal, the strength and microgeometry of a phosphate thin film depends on the conditions of phosphatization as well as on the composition of the phosphatizing solution. The microgeometry of the surface is determined by means of optical, optical-mechanical, or mechanical profilometers. The disadvantages of these devices (microinterferometer, Linniks double microscope) consists in their insufficiantly large measuring field. On the other hand, mechanical or optical-mechanical

Card 1/2

KHAIN, I. I., Candidate Tech Sci (diss) -- "Phosphating of steel in the presence of nitrates". Leningrad, 1959. 13 pp (Min Higher Educ USSR, Leningrad Order of Labor Red Banner Tech Inst im Leningrad Soviet), 150 copies (KL, No 22, 1959, 117)

S/080/60/033/007/005/020
A003/A001

AUTHOR: Khain, I. I.

TITLE: The Effect of the Roughness of the Phosphate Film on the Adhesion of the Varnish Coating. Communication 5

PERIODICAL: ,Zhurnal prikladnoy khimii, 1960, Vol. 33, No. 7, pp. 1526-1529

TEXT: Phosphate films with a roughness of from 3 to 75 were prepared in order to elucidate the effect of the roughness on the adhesion of a varnish coating. For comparison other samples were prepared by sandblasting. The roughness of these samples was 31.6 μ. The roughness was determined in all cases by a laboratory optical-mechanical ГОИ (GOI) profilograph (ИЗП-5 (IZP-5) model), using a method developed by the author and described in (Ref. 10). А-1-Н (A-1-N) varnish (ГОСТ 2699-44) (GOST 2699-44) was used as surface coating. It was shown that the optimum roughness value is 7-13 μ. Below or above this value adhesion decreases. It was shown that in the case of equal roughness the adhesion to a phosphated surface is higher than to a sandblasted surface of a metal. There is 1 table, 1 graph and 12 Soviet references.
SUBMITTED: October 26, 1959

Card 1/1

KHAIN, I.I.

Composition of phosphate films forming in the presence of nitrates. Zhur.prikl.khim. 33 no.7:1492-1494 Jl '60. (MIRA 13:7)
(Phosphates) (Nitrates) (Films(Chemistry))

KHAIN, I.I.

Effect of metal surface condition on the structure of phosphate film. Zhur. prikl. khim. 34 no.5:1028-1031 My '61.
(MIRA 16:8)

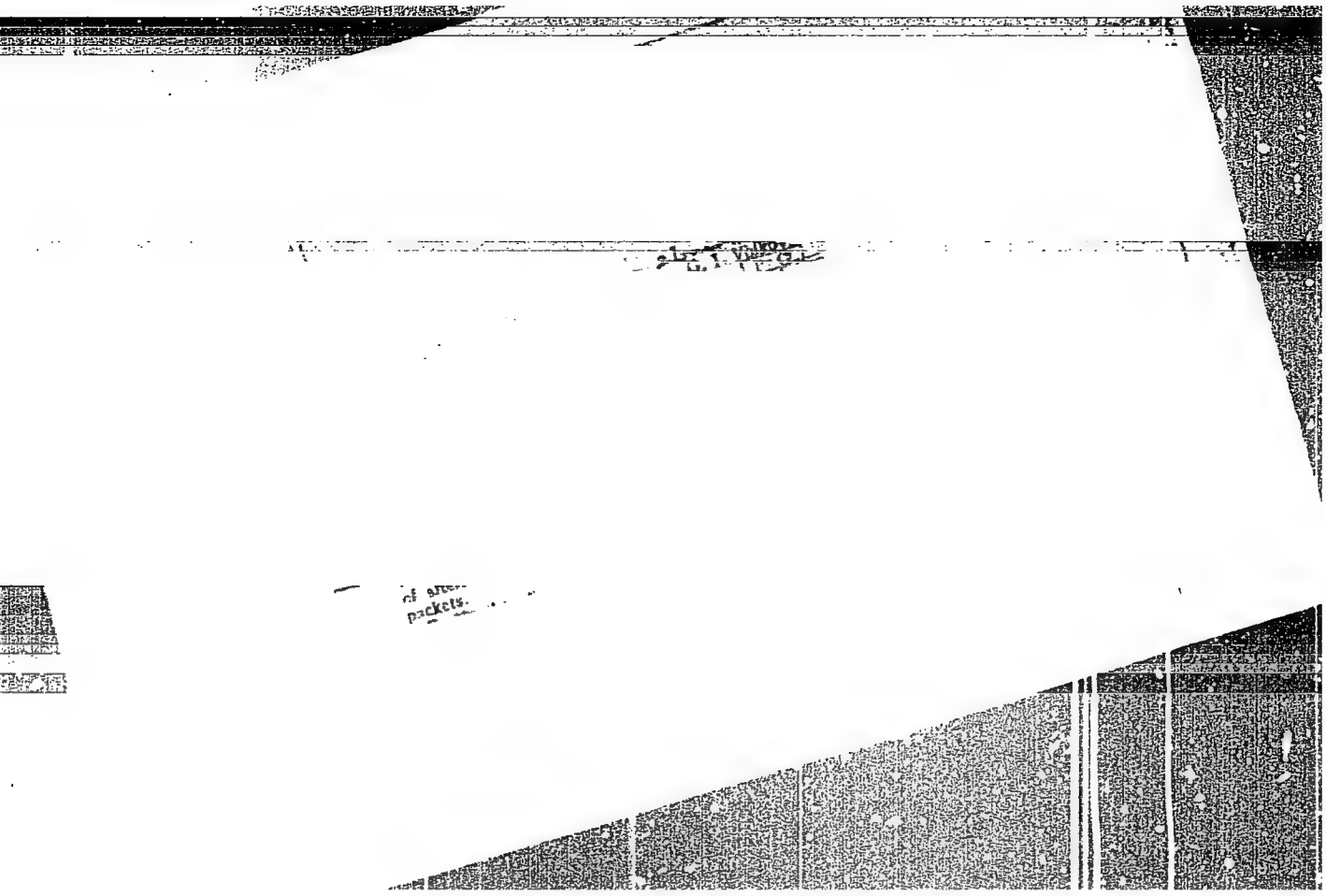
(Phosphate coating)

KHATN, M. I. i TOV'IN, M. V.

25557

K Metodike Ob"yemnogo Opredeleniya Galogenidov. Trudy In-ta Gidrobiologii (Akad. Nauk. Ukr. SSR) No. 24, 1949 S 69 - 72. NA UKR Yaz - Soderzhit Na Rus. Yaz.

SO: LETOPIS No. 34



Khain, P.G.

USSR/Chemical Technology - Chemical Products and Their Application. Electrochemical Manufacturing. Electrodeposition. Chemical Sources of Electrical Current. H-6

Abs Jour : Referat Zhur - Khimiya, No 1, 1958, 1924

Author : Faynshteyn S.Ya., Khain P.G., Simon A.G., Kruglyy S.M.

Inst : -

Title : Basic Trends in the Development of Industrial Chlorine Production Abroad.

Orig Pub : Khim. prom-st', 1957, No 4, 53-59

Abstract : No abstract.

Card 1/1

KHAIN, P.G.

FAYNSHTEYN, S.Ya.; KHAIN, P.G.; SIMON, A.G.; KRUGLYY, S.M.

Basic trends in the development of chlorine production technology abroad. Khim.prom. no.4:245-251 Je '57. (Chlorine industry)

KHAIN, P. G.

64-1-19/19

AUTHORS: Faynshteyn, S. Ya., Khain, P. G., Kruglyy, S. M., Simon, A. G.

TITLE: Main Trends in the Development of the Methods of Chlorine Production (Osnovnyye napravleniya razvitiya tekhniki proizvodstva khlora) *see Khimicheskaya Promyshlennost' 1957, Nr 4, P. 245 (Sm. Khim.prom., No 4, 245, 1957) Reworking of Electrolytic Lyes (Pererabotka elektroliticheskikh shchelokov)

PERIODICAL: Khimicheskaya Promyshlennost', 1958, Nr 1, pp. 57-64 (USSR)

ABSTRACT: Under the heading "From Abroad" this paper deals exclusively with foreign production- and working methods, and gives some statistical data as well as various commentaries on the advantages and disadvantages resp. of the individual methods. A schematic description with a detailed explanation of an evaporating plant of the firm "Buflovak" (Buffalo, USA) is given as well as a second scheme of a continuous evaporating plant for electrolytic lyes. Several details of the chlorine production plants of the firm "Diamond Alkali Co." are given as well as data on quality and production. Working methods

Card 1/2

Main Trends in the Development of the Methods of Chlorine Production. See Khimicheskaya Promyshlennost', 1957, Nr 4, p. 245. 64-1-19/19
Reworking of Electrolytic Lyes

of the purification of caustic soda in the USA are given with a schematic description of a refining plant with liquid ammonia as well as the scheme of a device for the production of anhydrous caustic soda which was also developed in the USA. Details concerning the making firms, operational balances and the capacity of the plants are continuously given in the paper.
There are 4 figures, 1 table, and 36 references, 0 of which are Slavic

AVAILABLE: Library of Congress

1. Chlorine-Production-Methods

Card 2/2

USCOMM-DC-54825

ALABYSHEV, A.F.; GRACHEV, K.Ya.; ZARETSKIY, S.A.; LANTRATOV, M.F.; FEDOT'YEV, N.P., prof., retsenzent; KHAIN, P.G., inzh., retsenzent; MORACHEVSKIY, A.G., red.; ERLIKH, Ye.Ya., tekhn.red.

[Sodium and potassium; their preparation, properties, and uses] Natrii i kalii; poluchenie, svoistva, primenenie. Pod red. A.F. Alabysheva. Leningrad, Gos.nauchno-tekhn.izd-vo khim.lit-ry, 1959. 390 p. (MIRA 13:3)
(Sodium) (Potassium)

5(1)

AUTHORS: Khain, P. G., Simon, A. G. SOV/64-59-5-12/28

TITLE: On New Types of Salt Reservoirs for Chlorine Factories

PERIODICAL: Khimicheskaya promyshlennost', 1959, Nr 5, pp 410-413 (USSR)

ABSTRACT: A short description of the two main types of salt reservoirs is given as are used in plants producing chlorine, i.e. underground salt reservoirs (Figs 1-5) and the mechanized, not underground salt reservoirs (Figs 6,7). The salt is solved in water in these modern salt reservoirs and a saturated salt solution is produced. The salt reservoir consists of a double-spaced tank built on reinforced concrete, the length of it being dependent on the amount of salt that has to be storaged. Wagons loaded with salt, are directly emptied in a salt reservoir. The salt is solved in water. Then a centrifugal pump pumps the salt solution into tanks and a recirculation to complete saturation of brine is rendered possible. The bottom of the salt reservoirs consists of vibration concrete M-90 and bitumen BN-111-u. The second mentioned salt reservoir (Fig 3) differs from the first in that that the wagon with salt can be emptied on each side. This special salt reservoir (Fig 4) exhibits two parallel covered

Card 1/3

rows with 5 spaces each, so that complete saturation may be obtained by the overflowing of the brine. The salt reservoir (Fig 5) is covered too, containing two storage places (25 m long, 10 m wide, 3.5 m deep), which are placed along the rails of the wagon. The pump is mounted between the storage places. The open, not underground salt reservoir (Fig 6) has a grab crane for salt distribution, but exhibits some deficiencies as to discharge possibilities. The salt reservoir of figure 7 overcomes these deficiencies in that it exhibits a bridge crane, the discharge of the salt is made under the crane, and the salt reservoir has two storage places, which fact admits an easier cleaning and overhauling. A diminution of the volume of the underground salt reservoir involves investment expenses increased to the 1.5 - 1.6 fold, therefore the types (Figs 3,4) are recommended for smaller salt reservoirs, as they possess tanks for the brine at the same time. The water temperature is important for the solution of salt, because, according to S. S. Shraybman, a concentration rate of 317 - 320 g salt/l water is obtained at 70° in 6 - 8 minutes, whereas it takes 15 - 20 minutes at 20°. The importance of mechanization of the mud transport is pointed to as well as some deficiencies that occur in building salt reservoirs. Final-

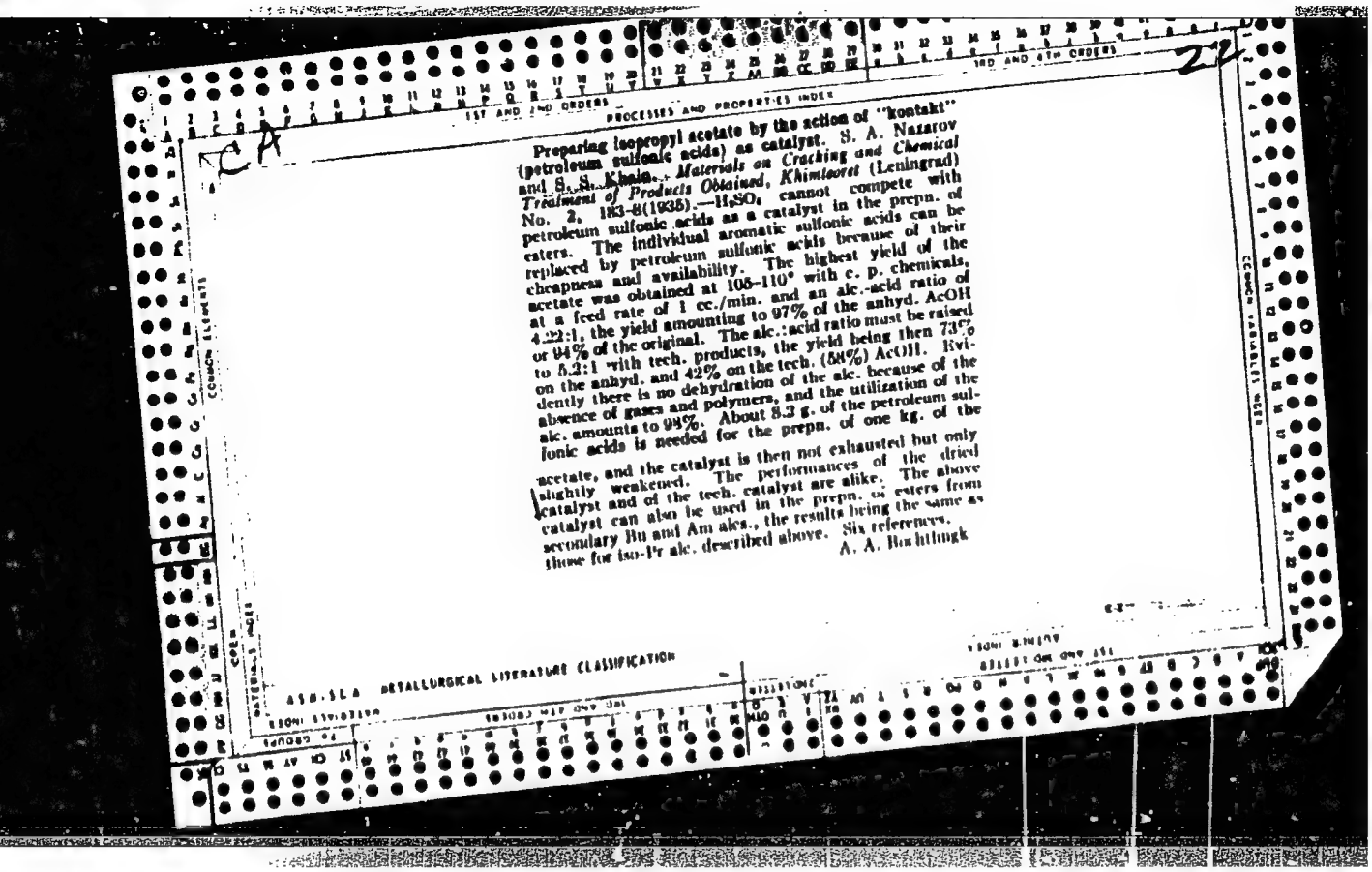
On New Types of Salt Reservoirs for Chlorine Factories SOV/64-59-5-12/28

ly some indications for the building of salt reservoirs are given.
There are 7 figures.

Card 3/3

SIMON, A.G.; KHAIN, P.G.; YAKIMENKO, L.M., doktor tekhn.nauk

Ways of intensifying the technological processes in the production of chlorine. Zhur.VKHO 6 no.1:16-27 '61. (MIRA 14:3)
(Chlorine)



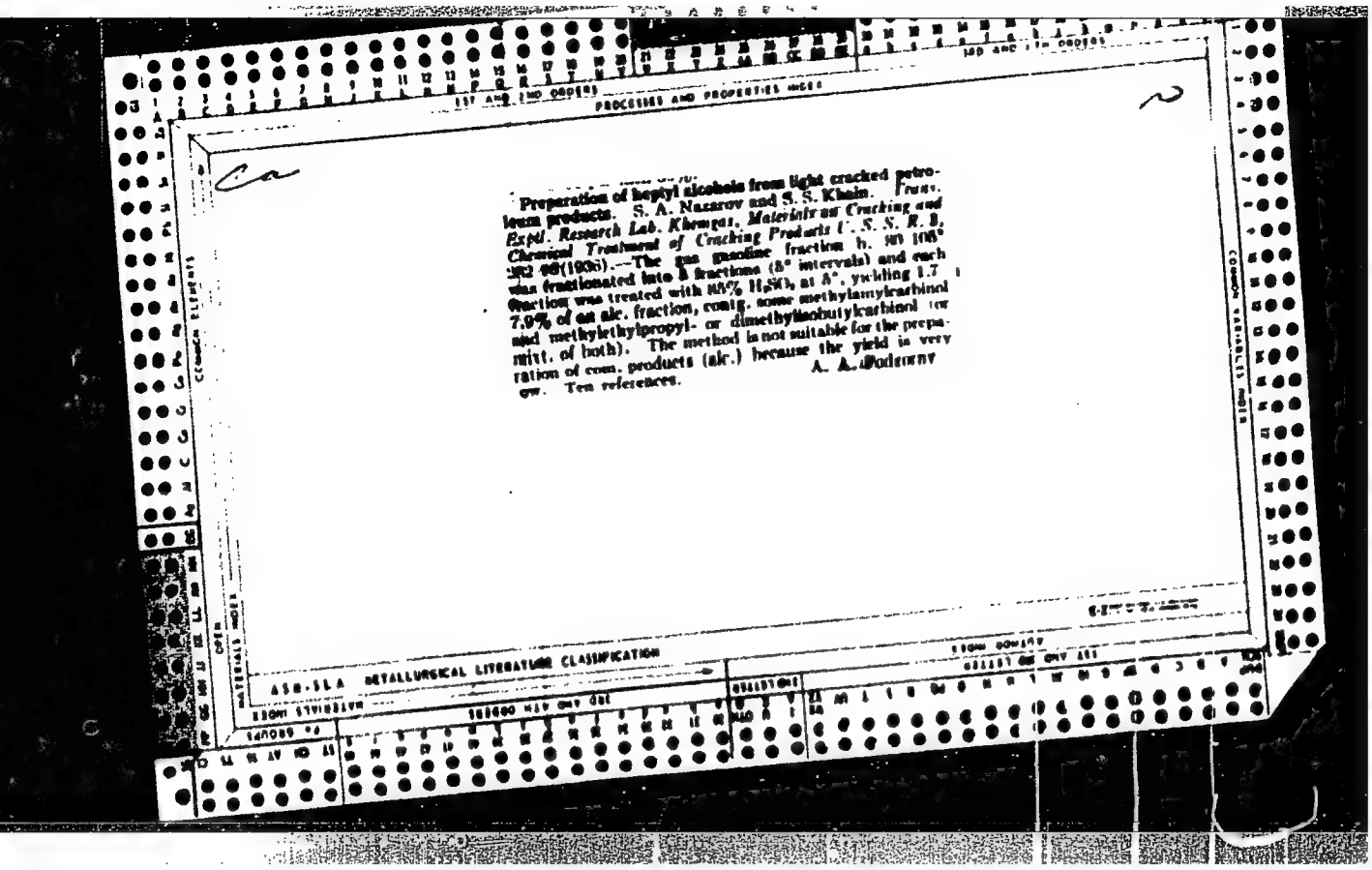
PROCESSES AND PROPERTIES INDEX

CA

Preparing isopropyl acetate by the action of "kontakt" (petroleum sulfonic acids) as catalyst. S. A. Nazarov and S. S. Khain. *Materials on Cracking and Chemical Treatment of Products Obtained, Khimtoorf* (Leningrad) No. 2, 183-8(1935).—H_2SO_4 cannot compete with petroleum sulfonic acids as a catalyst in the prepn. of esters. The individual aromatic sulfonic acids can be replaced by petroleum sulfonic acids because of their cheapness and availability. The highest yield of the acetate was obtained at 105–110° with c. p. chemicals, at a feed rate of 1 cc./min. and an alc.-acid ratio of 4.2:1, the yield amounting to 97% of the anhyd. AcOH or 94% of the original. The alc.:acid ratio must be raised to 5.2:1 with tech. products, the yield being then 73% on the anhyd. and 42% on the tech. (80%) AcOH. Evidently there is no dehydration of the alc. because of the absence of gases and polymers, and the utilization of the alc. amounts to 98%. About 8.2 g. of the petroleum sulfonic acids is needed for the prepn. of one kg. of the acetate, and the catalyst is then not exhausted but only slightly weakened. The performances of the dried catalyst and of the tech. catalyst are alike. The above catalyst can also be used in the prepn. of esters from secondary Bu and Am alcs., the results being the same as those for iso-Pr alc. described above. Six references.

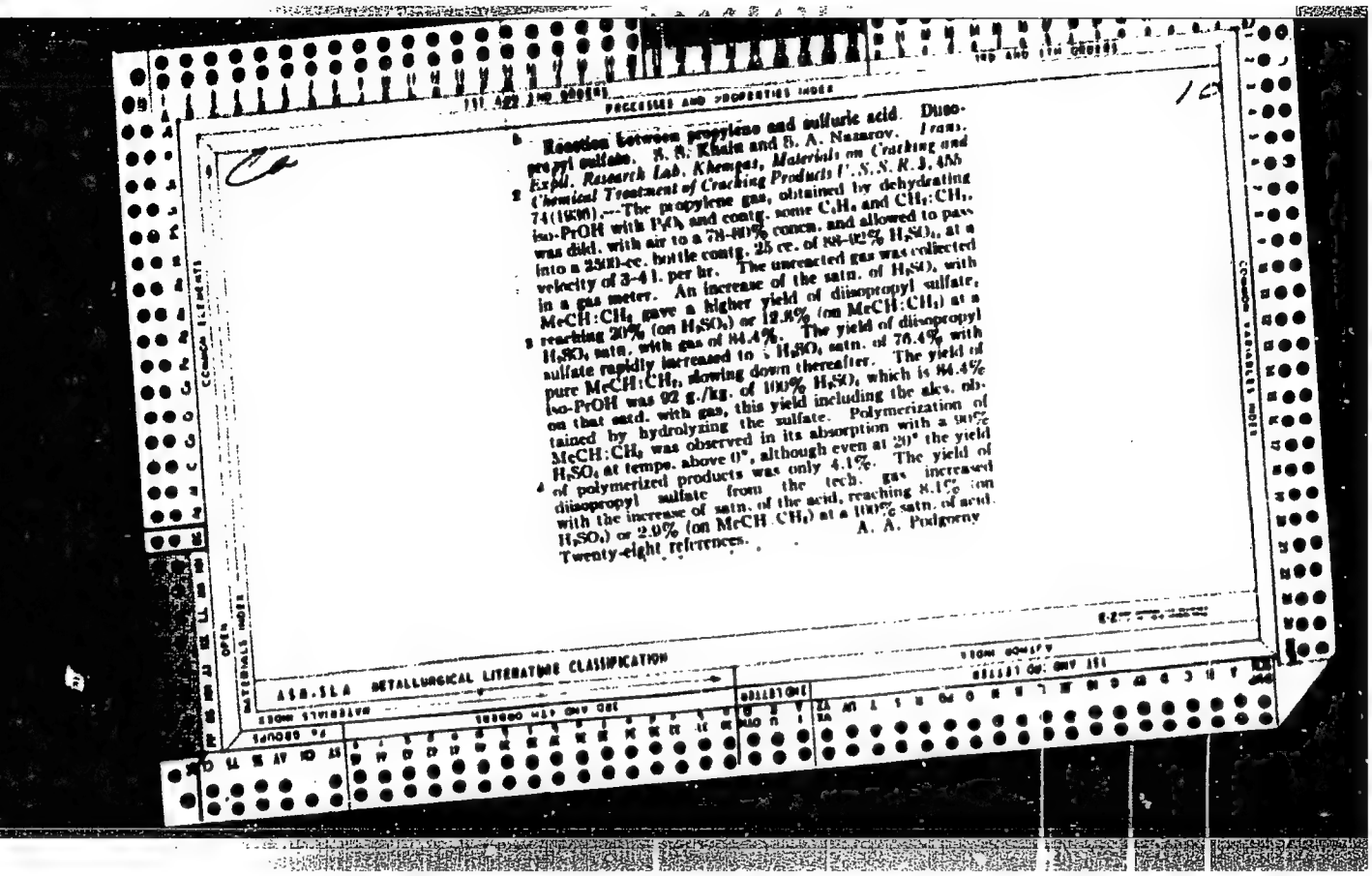
A. A. Boshtingk

A58-51A METALLURGICAL LITERATURE CLASSIFICATION

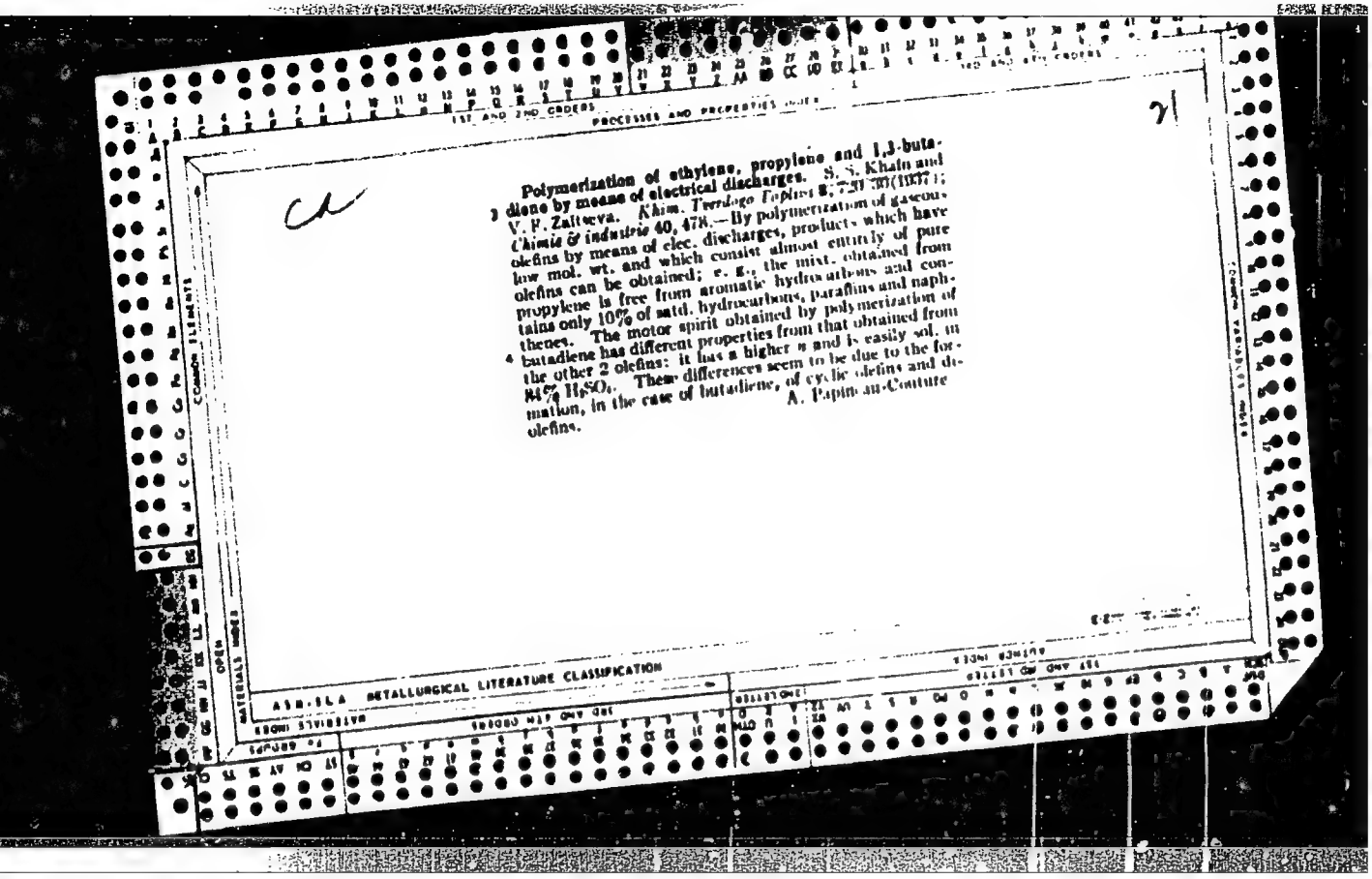


Preparation of heptyl alcohols from light cracked petroleum products. S. A. Nazarov and S. S. Khain. *Trans. Exptl. Research Lab. Khimgas, Materialy na Cracking and Chemical Treatment of Cracking Products U. S. S. R.*, 1932 60(1936).—The gas gasoline fraction b. 80 100° was fractionated into 5 fractions (5° intervals) and each fraction was treated with 80% H_2SO_4 at 5°, yielding 1.7 7.9% of an alc. fraction, consg. some methylamylcarbinol and methylethylpropyl- or dimethylisobutylcarbinol (or mixt. of both). The method is not suitable for the preparation of com. products (alc.) because the yield is very low. Ten references.

A. A. Podkamny



Reaction between propylene and sulfuric acid. Diisopropyl sulfate. S. S. Khain and S. A. Nazarov. *Trans. Explil. Research Lab. Khempas, Materials on Cracking and Chemical Treatment of Cracking Products U.S.S.R.* 3, 4Ab 74(1938).—The propylene gas, obtained by dehydrating iso-PrOH with P_2O_5 and contg. some C_2H_4 and CH_4:CH_3, was dild. with air to a 78-80% concn. and allowed to pass into a 2300-cc. bottle contg. 25 cc. of 88-92% H_2SO_4, at a velocity of 3-4 l. per hr. The unreacted gas was collected in a gas meter. An increase of the satn. of H_2SO_4 with MeCH:CH_2 gave a higher yield of diisopropyl sulfate, reaching 20% (on H_2SO_4) or 12.8% (on MeCH:CH_2) at a H_2SO_4 satn. with gas of 84.4%. The yield of diisopropyl sulfate rapidly increased to 5 H_2SO_4 satn. of 76.4% with pure MeCH:CH_2, slowing down thereafter. The yield of iso-PrOH was 92 g./kg. of 100% H_2SO_4, which is 84.4% on that satd. with gas, this yield including the alc. obtained by hydrolyzing the sulfate. Polymerization of MeCH:CH_2 was observed in its absorption with a 90% H_2SO_4 at temps. above 0°, although even at 20° the yield of polymerized products was only 4.1%. The yield of diisopropyl sulfate from the tech. gas increased with the increase of satn. of the acid, reaching 8.1% (on H_2SO_4) or 2.0% (on MeCH:CH_2) at a 100% satn. of acid. Twenty-eight references. A. A. Podgorny

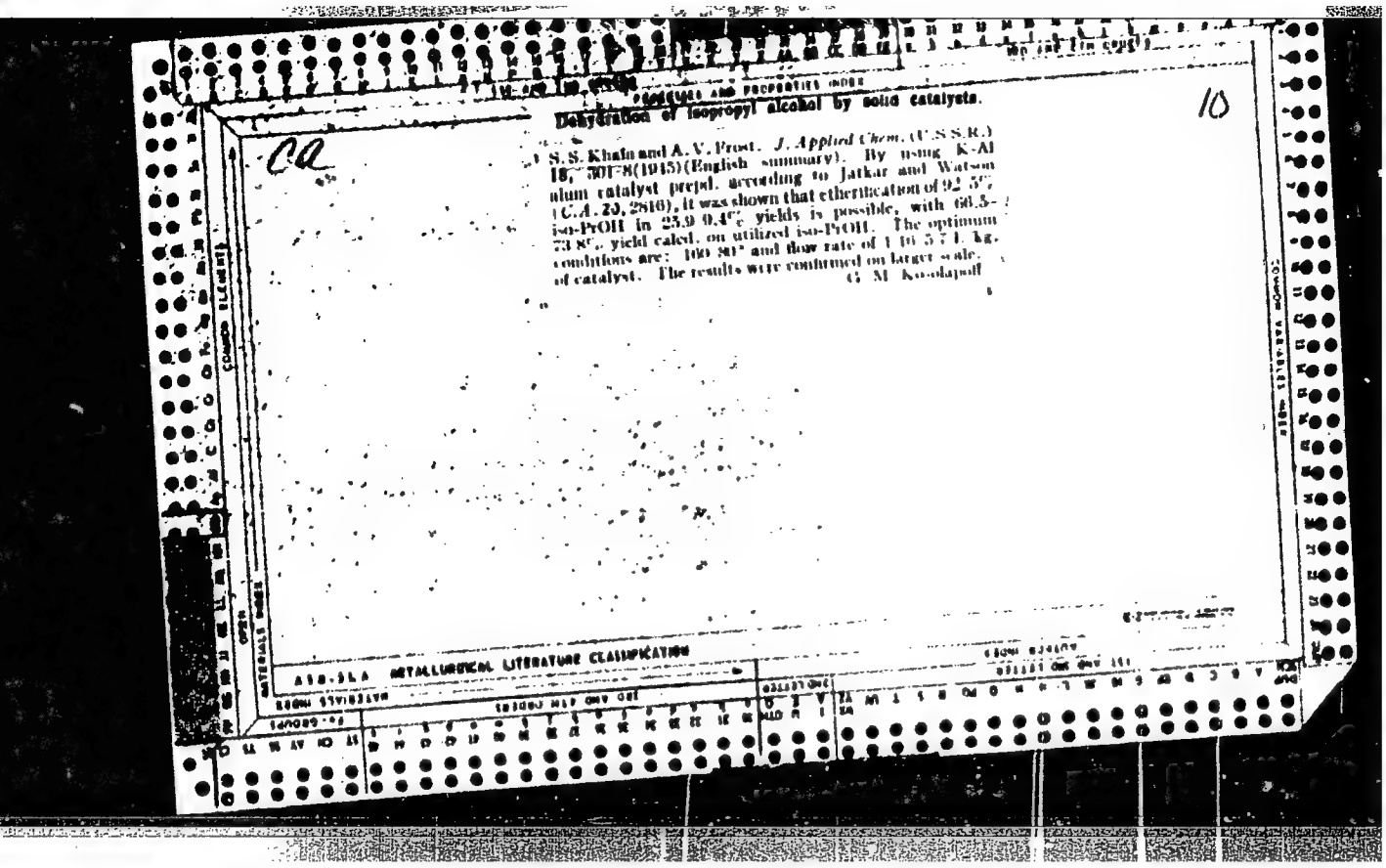


PROCESSES AND PROPERTIES INDEX

1ST AND 2ND ORDERS

Polymerization of ethylene, propylene and 1,3-butadiene by means of electrical discharges. S. S. Khaln and V. F. Zaitseva. *Khim. Tverdogo Topliva* 8, [illegible] (1937); *Chimie & industrie* 40, 478.—By polymerization of gaseous olefins by means of elec. discharges, products which have low mol. wt. and which consist almost entirely of pure olefins can be obtained; e. g., the mixt. obtained from propylene is free from aromatic hydrocarbons and paraffins and contains only 10% of satd. hydrocarbons, paraffins and naphthenes. The motor spirit obtained by polymerization of butadiene has different properties from that obtained from the other 2 olefins: it has a higher *n* and is easily sol. in 84% H_2SO_4. These differences seem to be due to the formation, in the case of butadiene, of cyclic olefins and diolefins. A. Papin-au-Couture

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



Dehydration of isopropyl alcohol by solid catalysts.

S. S. Khan and A. V. Frost. *J. Applied Chem.* (U.S.S.R.) 15, 30[78](1945)(English summary). By using K-Al alum catalyst prepd. according to Jatkar and Watson (*C.A.* 29, 2816), it was shown that etherification of 92.5% iso-PrOH in 25.9–0.4° yields is possible, with 60.5–73.8°, yield calcd. on utilized iso-PrOH. The optimum conditions are: 100–80° and flow rate of 1 to 5.7 l. kg. of catalyst. The results were confirmed on larger scale.

G. M. Kosolapoff

A58-5LA METALLURGICAL LITERATURE CLASSIFICATION

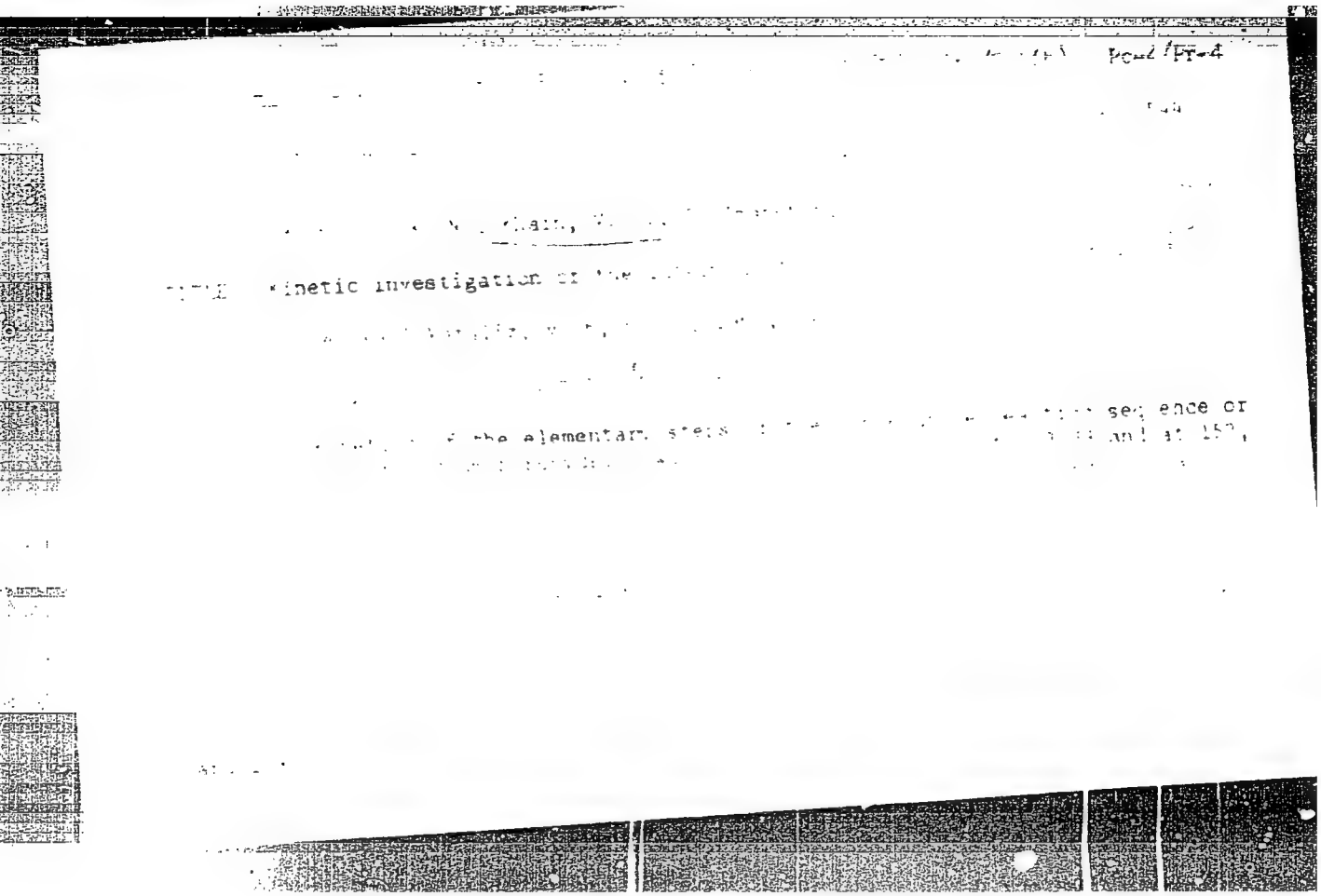
VELEV, Vladimir; KHAIN, Vladimir; POLASEK, Adolf

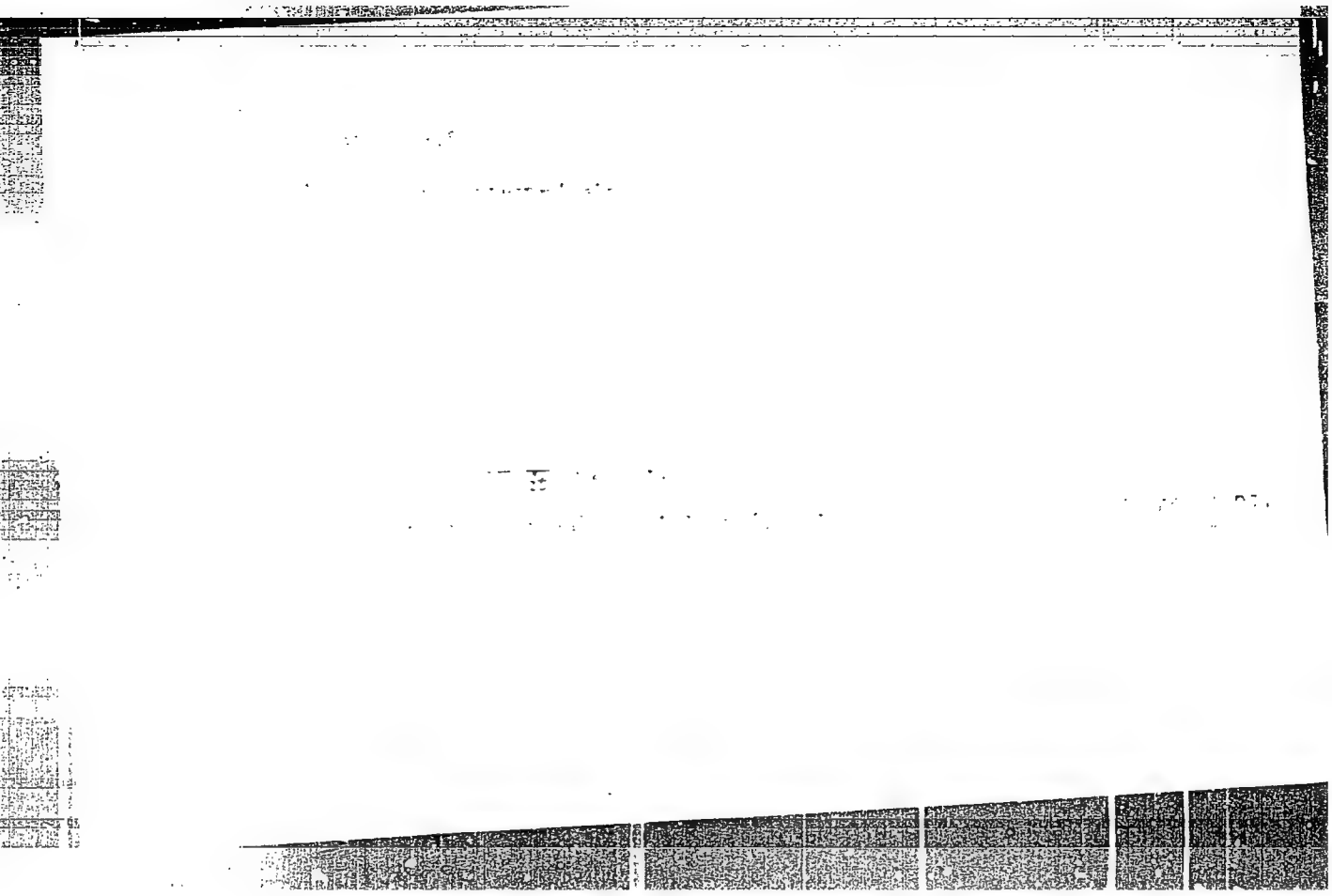
Is the centralization of clicking operations economical?
Kozarstvi 13 no.2:52-53 F '63.

1. Vyrobni hospodarska jednotka Svit, Gottwaldov.

AGAFEYEV, N.I.; BALATOV, P.S.; ZVEREV, B.P.; IVANOV, I.A.; KHUGLYY, S.K.; NIMYY, I.M.; FLEYSHMAN, V.G.; KHAIN, V.A.; SHUR, V.A.; EL'SKIY, V.N.

Condensation of a solution in vacuum evaporator installations. Prom.energ. 15 no.4:15-16 Ap '60. (MIRA 13:6)
(Evaporating appliances)





APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721710003-0"

L 59535-65

ACCESSION NR: AP5016815

and dependence of the respective half-conversion times ($\tau_{1/2}$) upon temperature (T) and pH are:

$NaBH_4$	$\ln K_T = -\frac{6449}{T} + 40{,}20;$	$\lg \tau_{1/2} = pH - (0{,}034T - 1{,}02)$
$NaBH_3O$ H	$\ln K_T = -\frac{5037}{T} + 37{,}88;$	$\lg \tau_{1/2} = pH - (0{,}027T + 0{,}357)$
$NaBH_2(OH)_2$	$\ln K_T = -\frac{5544}{T} + 37{,}63;$	$\lg \tau_{1/2} = pH - (0{,}027T + 0{,}384)$
$NaBH(OH)_3$	$\ln K_T = -\frac{5444}{T} + 37{,}63;$	$\lg \tau_{1/2} = pH - (0{,}024T + 4{,}00).$

Replacement of sodium by Li, K, or Fe affects neither the overall rate nor the rates of the individual steps of hydrolysis of the respective hydrides and hydroxyhydrides. Orig. art. has: 1 table, 2 figures, 11 formulas.

ASSOCIATION: Kazanskiy khimiko-tekhnologicheskiy institut im. S. M. Kirova (Kazan Chemical Technological Institute)

SUBMITTED: 12Ma/64 ENCL: SUB CODE: GC

NO REF SOV: 005

Card 3/3

L 57778-65 EPF(c)/EPR/EWA(b)/EWP(j)/EWT(m) Pc-4/Pr-4/Ps-4 RIPL

ACCESSION NR: AP5014855 RM/WW/JW UR/0020/65/162/003/0613/0616

AUTHOR: Mochalov, K.N.; Khain, V.S.; Gil'manshin, G.G.

TITLE: Generalized mechanism of hydrolysis of the borohydride ion and diborane

SOURCE: AN SSSR. Doklady, v. 162, no. 3, 1965, 613-616

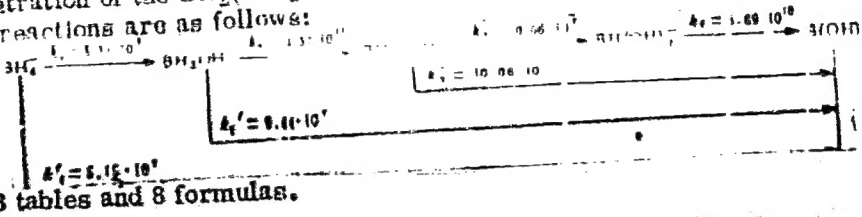
TOPIC TAGS: diborane hydrolysis, borohydride hydrolysis, borohydride ion, hydrolysis kinetics

ABSTRACT: On the basis of tabulated data, the authors have formulated a single, general mechanism encompasing the hydrolysis of the borohydride ion and diborane in neutral, acid, and alkaline media. In order to determine the relative rates of the successive reactions of this mechanism, a study was made of the kinetics of [illegible] reactions $BH_4^- \rightarrow BH_3OH^-$, $BH_3OH^- \rightarrow BH_2(OH)_2^-$ and $BH_2(OH)_2^- \rightarrow$ [illegible] and the variable [illegible] a solution of borohydride is determined [illegible] and that this rate coincides with the rate of conversion of BH_4^- to the BH_3OH^- ion. Hence the conversion $BH_4^- \rightarrow BH_3OH^-$ (via the intermediate complex [illegible]) is the rate-determining step of the [illegible] reaction of boranyl hydrolysis. The conversion $BH_2(OH)_2^- \rightarrow BH(OH)_3^-$ is the first step in the hydrolysis of $BH_2(OH)_2^-$ to the borate; the second stage of this process.

Card 1/2

L 57778-65
ACCESSION NR: AP5014855

$BH(OH)_3^- \rightarrow B(OH)_4^-$, is approximately 500 times faster than the first. It is apparent ... aqueous solution of borohydride constitutes a complex system made up of many components. The concentrations of the latter were found and the quantitive composition of the system was determined at various points in time; the concentrations of the ... and $BH(OH)_3^-$ ions remain low (0.03-0.05 mole%) during the entire process, whereas the concentration of the $BH_2(OH)_2^-$ ion attains 25.7 mole %. The rate constants of consecutive reactions are as follows:



Orig. art. has: 3 tables and 8 formulas.

ASSOCIATION: Kazanskiy khimiko-tekhnologicheskiy institut im. S. M. Kirova (Kazan' Chemical Engineering Institute)

SUBMITTED: 06Nov64 ENCL: 00 SUB CODE: GC

NO REF SOV: 007 OTHER: 011

MOCHALOV, K.N.; KHAIN, V.S.

Reaction of sodium borohydride with potassium ferricyanide.
Zhur. neorg. khim. 10 no.2:532-533 F '65. (MIRA 18:11)

1. Kazanskiy khimiko-tekhnologicheskiy institut imeni Kirova, kafedra analiticheskoy khimii. Submitted May 30, 1964.

MOCHALOV, K.N.; KHAIN, V.S.

Mechanism of ferricyanide ion reduction by sodium borohydride. Zhur. fiz. khim. 39 no.8:1960-1964 Ag '65. (MIRA 18:9)

1. Kazanskiy khimiko-tekhnologicheskiy institut.

BOGUTSKIY, S.S.; KHAIN, V.Ya.

Design of a sparkproof voltage-measuring transformer. Trudy MakNII 14. Vop. gor. elektromekh. no.5:281-289 '62. (MIRA 16:6)
(Electric transformers) (Voltmeter)